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THE MEDICAL SCHOOL OF THE FUTURE.*

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AMONG the intellectual movements that have characterized the century now drawing to a close there is perhaps no one more deserving of careful study than that which is concerned with providing education for the people in the school, the academy and the university. The importance of popular education became apparent in proportion as political freedom was secured for the people. Thus Viscount Sherbrooke, better known as the Hon. Robert Lowe, in the reform debates of 1866 and 1867, after the passage of a bill for the extension of the suffrage, uttered the well-known words: "We must now at least educate our masters." The same sentiment has also more recently been embodied in the inscription on the Boston Public Library. "The Commonwealth requires the education of the people as the safeguard of order and liberty," and in the presidential address of Dr. J. M. Bodine[1] at the meeting of the Association of American Colleges in 1897 we find the same idea thus expressed, "In America the citizen is king. The king must be educated to wield aright his ballot-sceptre."

For many years educators looked upon their work with no little complacency. The educational systems of the various civilized countries were supposed to be well adapted to the ends in view, and educational exhibits have generally been regarded as important features of international expositions. But within the memory of most of those now before me signs of serious discontent have not been wanting. Education has not always been found to furnish the required safeguards for order and liberty. Highly educated men have often been found singularly lacking in mental balance. Schools for the inculcation of "common sense" have never yet been established. Even the great development of psychology as an experimental science, which has occurred chiefly within the last twenty-five years, although it has served to establish many laws of mental action, has thus far failed to justify the hope that pedagogy may find in psychology a foundation for the erection of rational systems of education. Indeed we have recently been told by one of the ablest expounders of this science that it is a great mistake for teachers to "think that psychology, being the science of the mind's laws, is something from which they can deduce definite programs and schemes and methods for immediate school-room use. Psychology is a science and teaching is an art. A science only lays down lines within which the rules of the art must fall, laws which the follower of the art must not transgress; but what particular thing he shall positively do within those lines is left exclusively to his own genius."[2]

Even this general guidance has been very imperfectly afforded, for the limits set by the science of psychology to the art of teaching have never been precisely defined. In fact the most fundamental question of all, *viz.*, the relation of mental to physical development has not yet been settled, although much material for its study has been collected. It is not, therefore, surprising that in many countries teachers have made too great demands upon the time and strength of growing children.

This has been clearly the case in Germany, where schoolboys from eight to fifteen years of age have found their vital energy so far exhausted by the school-work required of them that they have lost all inclination for vigorous athletic amusements so naturally indulged in by Anglo-Saxon boys. The deterioration of the race as a result of too close application to intellectual pursuits, to the neglect of the physique, has been fortunately obviated, in the case of Germany, by the army system which takes entire possession of the youth before it is too late and, by requiring him to devote three years to the education of his body, turns him out, at the end of that period, a young man with mind and body trained to a high degree of efficiency, well fitted for civil as well as military pursuits and comparing favorably in all respects with men of his age in other nations. Looked at from this point of view the German army must be regarded as an important part of the educational system of the country, although as a piece of educational machinery its workings cannot be considered economical. In fact, the absurdity of depending on the army to remedy the defects of the school system has long since been forced upon the attention of German educators and the difficulties above alluded to are now in a fair way to be removed.

In our own country difficulties of quite a different kind have been met with. Here the great danger which threatens our system of popular education arises from its close association with party politics. The office of a school committeeman in one of our large cities has been well de-

*President's Address.

scribed as "the smallest coin in which politicians pay their debts" and as long as the education of our children continues to be entrusted largely to men who consider their position on a school board as the lowest step of the political ladder, there is small hope of the adoption of rational methods of education. Moreover, this intimate alliance between education and politics greatly aids the efforts of persons more zealous than discreet to direct the instruction of children in accordance with their own special views. Thus, nearly all the States of the Union have upon their statute books laws requiring the physiological action of alcohol to be taught to children in all grades of the public schools. These laws violate the first principles of pedagogy inasmuch as the physiological action of a drug cannot possibly be understood without a familiarity with anatomy, physiology and chemistry which school children cannot be supposed to possess. They have been passed at the bidding of total abstinence associations, sometimes in opposition to the earnest protests of the teachers entrusted with their execution. How these excrescences upon our educational system may be best removed and the work of instruction placed under the control of those best qualified to direct it are questions demanding serious consideration.

I have mentioned these instances in which great educational systems have been found wanting merely for the sake of pointing out that the critics of our methods of medical education, who, as Professor Exner[3] has shown, are now raising their voices in every land, do but give a special expression to a wide-spread feeling that our educational systems are not accomplishing all the objects for which they have been devised, and that the discontent which they imply is but a healthy dissatisfaction with the results thus far accomplished. May the time be far distant when those in charge of our educational interests shall rest content with what they have achieved, for this will indicate that a state of stagnation has been reached similar to that which characterizes the institutions of the Celestial Empire and that no further attempt is to be made to adapt our methods of instruction to the constantly widening domain of human knowledge and experience.

It may, perhaps, be well for me at this point to offer a few words in explanation of the selection of such a well-worn theme as medical education as the subject of my remarks this evening. It is true that in recent years the subject has been a favorite one with those who have been called upon to address medical associations or classes of graduating students and if, in spite of this fact, I venture to add another address to the fast growing literature of the subject, my justification may be found in the following reasons. In the first place, it must be borne in mind that such addresses are very quickly forgotten. "Were it not so," as Dr. Billings has remarked, "it would be a hard world for address-givers." In the second place, the progress of medicine at the present time is so rapid that new points of view are constantly being secured and it is, therefore, not at all impossible that, even at comparatively short intervals, new and valuable suggestions may be made both with regard to subjects to be taught and to methods to be employed in giving the instruction.

Lastly, it so happens that during the academic year now nearly completed, the faculty of the Harvard Medical School has inaugurated an entirely new plan of instruction in the sciences of Anatomy, Physiology and Pathology. This scheme, although still in the experimental stage, embodies ideas of such fundamental importance in medical education that its presentation to a representative body of the medical profession seems to me to be peculiarly appropriate.

I shall therefore ask you to consider with me this evening what lessons the faculty of a modern medical school may draw from recent advances in medical science and recent experience in medical education or, in other words, on what lines the instruction of a medical school of the first rank is likely, in the immediate future, to be organized. I say in the *immediate* future, for what changes are in store for us in the course of the next few decades it is equally impossible to foresee and useless to speculate.

Relation of Medical Schools to Universities.—One of the most hopeful signs of the times in the field of medical education is the growing tendency of the better schools to ally themselves to Universities and of Universities to establish Medical Departments. Of the great advantages to medical education which may be expected from this union it is unnecessary for me to speak, for they formed the subject of a thoughtful discourse delivered by the last president of this Congress at Yale University in 1888.[4] The twelve years that have elapsed since he spoke have brought accumulating evidence of the soundness of his views. In fact, it is difficult to see how a private medical school of the joint stock company type can ever, in the future, rise to the first rank, for such a school is not much more likely to attract endowments than a cotton mill, and without endowments the enormous expenses of a modern first-class medical school cannot possibly be met.

Great as are the benefits to a medical school of thus forming a department of a great university, the advantages of the union are not wholly on one side. Beside the increase of prestige secured to the University by the broadening of its functions, the establishment of a medical school as part of the university organization greatly facilitates the instruction of those students who, without any intention of becoming physicians, seek in the study of the medical sciences a means of general culture and mental discipline.

The relations between the governing body of a University and its medical faculty in matters of administration are often defined by custom and tradition rather than by statutory provisions and vary considerably in different institutions. In general two methods of government may be distinguished. Either the initiative is left with the

teaching faculty, the governing body exercising simply a veto power, or the governing body acts directly without necessarily asking advice from the faculty or its members. The former method of government is most likely to be found in those cases in which a well-established medical school has allied itself to a University for the sake of the mutual benefits that may ensue from the union, and the latter method in those cases in which a University has completed its organization by the creation of a medical department. Both methods have certain advantages and neither is without its drawbacks. In all cases men are more important than methods. On the one hand, the collective judgment of a teaching faculty on matters relating to medical education is likely to be of more value than that of a governing body which may not, and generally does not, include physicians among its members. On the other hand, personal and selfish considerations are perhaps more apt to sway the judgment of a faculty than that of a body of trustees, especially when the question is that of the appointment of teachers. That this is not a serious danger, however, the experience of Germany seems clearly to show, for in that country, as Dr. Farlow has recently pointed out, the faculty "has more power in regard to appointments and the general policy of the university"[5] than with us, and yet we find there the custom of calling professors from one university to another fully established, a custom which must be regarded as one of the strongest influences in maintaining a high standard of educational efficiency. On the whole, therefore, even with this possibility of error, the judgment of a faculty would seem to be the safer guide and there are probably few boards of trustees who would feel themselves justified in disregarding it altogether.

The above-mentioned advantages of a union between a medical school and a university will naturally become more obvious as the problems of medical education become more complex and the methods of instruction more costly. Hence we may expect in the near future to find all of the better class of medical schools under the ægis of a University and we may reasonably hope that this change will be associated with a diminution of the total number of medical schools now so greatly in excess of the needs of the country.

The union of a medical school with a university at once compels the consideration of the proper relation between the academic department and the professional school. To say that the former should be the feeder of the latter and that the holding of an A.B. degree should be the condition of admission to professional studies, is to adopt the position taken by two of our leading medical schools. The A.B. degree, however, since the introduction of the elective system, no longer stands for a definite amount and kind of training. Hence, the Johns Hopkins Medical School demands not only the diploma but also evidence of ability to read French and German and of laboratory training in physics, chemistry and biology. The Harvard Medical School is content to accept the A.B. diploma as evidence of fitness to pursue professional studies, stipulating only that the holder shall possess an adequate knowledge of inorganic chemistry. Whether the example set by these schools will be generally followed is quite doubtful. Without undervaluing the importance of collegiate training as a preparation for a professional career it may perhaps be contended that a properly conducted admission examination is a better test of fitness to pursue the study of medicine than the possession of a diploma, the value of which varies so much with the character of the college bestowing it. Moreover, the possibility that a young man, unable to afford the expense of a college course, may yet by private study prepare himself for a professional career is not to be lost sight of. Hence, the Harvard school provides for the admission by special vote of the faculty of young men not holders of an A.B. degree, who may furnish satisfactory evidence that they have obtained an equivalent education and that they are consequently able to profit by the instruction which the school has to offer.

The recent lengthening of the course of study from three years to four, in all the best medical schools of the country, has drawn renewed attention to the importance of enabling the student who takes the A. B. degree as a preparation for medicine to so far shorten the sum total of the time devoted to his education that he may be able to enter upon the work of his profession at an age not in excess of that at which his European confrères begin their career as practitioners. A few years ago an examination of the best accessible evidence on the subject led to the conclusion that foreign systems of university education enabled students of medicine to enter upon their life-work at least two years earlier than was possible for the alumni of Harvard College, a condition dependent upon the fact that the changes in the academic department which had raised the age of graduation had been made with little regard to the interests of the professional schools and chiefly for the purpose of making the undergraduate department as complete as possible in itself. In other universities a similar condition existed, although probably not in the same degree, as in Harvard.

That the American medical student, seeking the best possible preparation for his profession, is seriously handicapped by these conditions has been generally recognized and the question of the best method of meeting the difficulty has been widely discussed. The most thorough treatment of the case consists in reducing the academic course to three years. Less radical methods are the provision in the academic department of courses of instruction by which students may anticipate a part of their professional work and the permission to count the first year of a professional course as the fourth year for the bachelor's degree. The first and most radical method meets with strenuous opposition owing to the deeply

rooted traditions which surround the four years' academic course in this country, while the other plans violate what in some colleges seem to be regarded as an educational axiom, that one course of study should not count toward two degrees. It is interesting to notice that, without any specific legislation to this end, the quiet working of the elective system has in Harvard College practically solved the problem by bringing about a condition in which, as President Eliot says,[6] "Any young man of fair abilities can now procure the degree in three years without hurry or overwork, if he wishes to do so or his parents wish to have him." The President further ventures to predict that "within a time comparatively short the majority of those who enter the freshman class will come to college with the purpose of completing the requirement for the degree in three years." As soon as a three years' residence becomes the rule rather than the exception, a young man spending four years in college will, of course, be regarded either as deficient in mental capacity or as having wasted his time.

That a reduction of the academic course to three years is an advantage to students looking forward to a professional career or to further study in a graduate school is too obvious to need discussion, but it is interesting to find the change advocated in the interest of the undergraduates themselves. Professor Clement L. Smith, for nine years Dean of Harvard College, points out[7] that there is a large and influential class of college men who get into the habit of frittering away their time simply because they have so much of it and that "for them and for those whom they influence—and these make up the largest part of the class we are now considering, the men who go from college into active life—the reduction of the course would be a distinct gain." Nor need we fear (as has sometimes been urged) that, in thus reducing the length of the college course, we shall lose the fourth and most valuable year, for, as Professor Smith says, "The senior year is the best year, not because it is the fourth, but because it is the last year. The causes which make it what it is come from before, not from behind; from the consciousness of opportunity passing away and of the serious problems of life close at hand. The period of waste lies between the fresh zeal and good resolutions with which the youth begins his course, and the growing sense of responsibility with which he draws near its close. It is this intermediate period that would be shortened in the briefer course. It is not the senior year that would be cut off; it is rather, let us say, the sophomore year, and with it might well go its absurd name."

It thus appears that the claims of the college and of the professional school upon the time of the students are in a fair way to be harmoniously adjusted.

Elective System.—Let us now consider in what way the medical school of the immediate future is likely to differ from that of the present time with regard to the subject matter of instruction. The most striking phenomenon presenting itself to the educator of to-day is the recent enormous widening of the educational horizon. "The immense deepening and widening of human knowledge in the nineteenth century and the increasing sense of the sanctity of the individual's gifts and will power"[8] are the fundamental facts which underlie the development of the elective system, but it is important to bear in mind that, as Professor Smith observes,[9] this development has been "due not so much to increase of knowledge—for not all new knowledge is straightway fit for educational purposes—but rather to the conversion of new fields of knowledge to the uses of education."

A discussion of the elective system of education with its attendant advantages and dangers would require far more time than I have at my disposal and I must content myself with pointing out the possibility that, in this period of transition, the educational pendulum may have swung to an extreme position and that too much attention has been given to the accidental differences of pupils while the essential similarity of their natures has been lost sight of. In discussions on individuality as a basis for the elective system one sometimes hears the statement (attributed to Leibnitz) that no two leaves of the same tree are alike. This dissimilarity, however, does not prevent them from all elaborating the same sap, and it is, moreover, always associated with sufficient essential similarity to enable any one, with even the most elementary knowledge of trees, to distinguish the leaves of an oak from those of a maple.

While admitting that some of the extreme positions now maintained by the advocates of the elective system may in the future have to be abandoned, no one can doubt the wisdom of adapting the education to the powers of the mind to be educated and of allowing, in the case of advanced students, the choice of the individual to be a determining factor in the selection of studies. Let us, therefore, enquire to what extent the elective system may properly find a place in the curriculum of our medical schools. That it forms an essential feature of our post-graduate schools of medicine scarcely needs to be mentioned, for these schools have been organized for the express purpose of enabling graduates in medicine to select such subjects for study as may seem to them desirable and to acquire more advanced knowledge than was possible in the undergraduate course. Moreover, in some of our larger schools, since the establishment of the compulsory four years' course, a portion of the instruction of the fourth year has been given in elective courses in various specialties. The elective system in medicine is, therefore, not altogether a novelty and the question now before us is whether it may be profitably extended to the earlier years of the course.

In his remarks at the dinner of the Harvard Medical Alumni Association in 1895, President Eliot used the following language: "There ought

to be in the Harvard Medical School an extended instruction far beyond the limits of any one student's capacity. This involves, of course, some optional or elective system within the school itself, whereby the individual student should take what is, for him, the best four years' worth, the faculty supplying teaching which it might take a single student eight, twelve or twenty years to pursue."[10]

One year ago last December, in an address which I had the honor to deliver in New York before the American Society of Naturalists,[11] I gave the reasons which seemed to me conclusive in favor of this extension of the elective system, and, with your permission, I will take the liberty of presenting as briefly as possible the views there set forth.

In the first place, it may be assumed that a medical school of the first rank should be an institution in which the most advanced instruction in all departments of medicine can be obtained, and on this assumption it is, of course, impossible to arrange a course of study that every student must follow in all its details, for, in the time which may properly be devoted to a course of professional study, it is quite impossible for even the most intelligent students to assimilate all the varied information which such a school may be reasonably expected to impart.

It seems, therefore, to be evident that in arranging a course of medical study a distinction must be made between those subjects which it is *essential* that *every* student should know and those subjects which it is *desirable* that *certain* students should know, that is, between those things of which no man who calls himself a physician can afford to be ignorant and those which are important for certain physicians but not for all; in other words, provision must be made both for required and for elective studies. The task of drawing the line between the essential and the desirable in medical education will require the greatest possible good judgment and readiness for mutual concession on the part of those engaged in the work, but there is no reason to fear that the difficulties will be found insuperable when the importance of the change has once been recognized.

Any one who is familiar with the existing methods of medical instruction is aware that in nearly every department many things are taught which are subsequently found to be of use to only a fraction of those receiving the instruction. Thus, the surgical anatomy of hernia is taught to men who will subsequently devote themselves to dermatology, future obstetricians are required to master the details of physiological optics, and the microscopical anatomy of muscles forms a part of the instruction of men destined to a career as alienists. Now no one can doubt the propriety of including instruction on all these subjects in the curriculum of a medical school, but it may be fairly questioned whether every student should be forced to take instruction in them all.

To better indicate the nature of the reform which I am advocating, allow me to describe a possible arrangement of a course of study in the department of physiology, with which I am, of course, more familiar than with any other. An experienced lecturer will probably find it possible to condense into a course of about forty or fifty lectures all the most important facts of physiology with which every educated physician must necessarily be familiar. Attendance upon these lectures, combined with suitable courses of text-book instruction and laboratory work, would suffice to guard against gross ignorance of physiological principles. In addition to this work, all of which should be required, short courses, of not more than eight or ten lectures each, should be provided, giving advanced instruction in such subjects as the physiology of the special senses, cerebral localization, nerve-muscle physiology, the internal secretion of glands, the physiology of the heart, circulation and respiration, the digestive secretions, the reproductive organs, etc. These courses should be elective in the sense that no student should be required to take them all. Each student might, however, very properly be required to choose a certain number of courses, which, when once chosen, become, for the student choosing them, required courses leading to examinations. There is, in my opinion, no doubt that an arrangement of instruction similar to that here suggested for physiology could be advantageously adopted in the departments of anatomy, histology, bacteriology, medical chemistry, pathology, surgery, and in the courses of instruction in the various special diseases, such as dermatology, ophthalmology, etc.

In the existing state of medical education the introduction of the elective system in some form or other seems to be an essential condition to any further important advance, for the curriculum of most of our schools is already so crowded that no considerable amount of instruction can possibly be added. Various arguments may, of course, be advanced in opposition to the change. It may perhaps be urged that no choice of studies can be made without determining to some extent the direction in which the work of a future practitioner is to be specialized and that such specialization cannot be properly and safely permitted until the student has completed his medical studies. To this it may be answered that, whatever may be the dangers of too early specialization, the dangers of crowding the medical course with instruction of which many students do not feel the need, and of thus encouraging perfunctory and superficial work, are certainly no less serious. It is, moreover, a matter of common observation among teachers in medical schools that a certain number of students very early make up their minds either that they will become surgeons, obstetricians, or specialists of some sort, or, on the other hand, that they have a strong aversion to certain branches of medicine and a determination never to practise them. For such students a prescribed curriculum necessarily involves great loss of time and energy.

If it be said that under this system the medical degree will cease to have the definite meaning now attached to it and that it will be impossible to tell from his diploma in what way a physician has been educated, it may be replied that, although the degrees of A.B., A.M., Ph.D. and S.D. are affected with exactly this same uncertainty of signification, their value seems in no way diminished thereby. As long as the M.D. degree stands for a definite amount of serious work on medical subjects, we may be reasonably sure that those who hold it will be safe custodians of the health of the community in which they practise.

If it be urged that the elective system in medical education will lead to the production of a class of physicians who, owing to the early specialization of their work, will be inclined to overrate the importance of their specialty and to see in every disease an opportunity for the display of their special skill, it may be pointed out that this result is apt to be due not so much to early as to imperfect instruction in the work of a specialist, and that since the elective system tends to encourage thoroughness in special instruction, the evil may be expected to diminish rather than to increase.

Methods of Instruction.—Having thus recognized the necessity of remodeling our conception of the subject matter to be taught and noted the importance of distinguishing between the essential and the desirable in medical education, we must next consider by what methods the needed information may be best imparted and the necessary training secured. There is, perhaps, no way in which modern educational methods differ more from those of an earlier period than in the greater prominence given to object lessons. Beginning with the kindergarten, the child is trained to cultivate his power to observe accurately and to manipulate skilfully and, through his school and college life, prominence is given to the objective side of education to an extent which would have seemed to the book-trained pedagogues of a former generation but ill-adapted to provide the well-stored mind which it was thought to be the principal object of education to secure. In the professional schools also the reaction against purely didactic methods has been strongly felt. Even in those professional pursuits to which the object method might seem at first sight least applicable, in the study of the law the so-called "case method" of instruction has been found to exert a vivifying influence.

In medical education in this country it is interesting to note that, in the very beginning, the instruction was more objective in its character than at a somewhat later period. In those early days it was in the office of his preceptor and at the bedside, as his actual assistant, that the embryo physician was initiated into the mysteries of his calling. Then followed a period when it was clearly perceived that the trained mind is necessary to interpret the data of observation and that mental training is essential to correct observing. Hence, schools were established to provide this training by means of systematic didactic lectures covering all the departments of medicine and usually extending over not more than four months. These schools were intended at first merely to supplement the work of the preceptors, but in process of time the relative importance of these two educational agencies was reversed and the work of the preceptors became supplementary to that of the schools. The function of the preceptors finally became so subordinate that their names no longer appeared in the catalogues, although this did not always indicate that they had ceased to afford students opportunities for practical clinical work.[12]

The schools, once established, grew chiefly by an increase in the length and number of the lecture courses as new and important subjects forced themselves on the attention of the medical profession. Against this undue extension of purely didactic methods of instruction a reaction has now set in and during the last ten or fifteen years loud voices have been raised in advocacy of more objective methods than those at present in use. It is not, however, the reinstatement of the preceptor that is urged, but rather the greater use of laboratory methods in the strictly scientific departments of medical instruction and their application as far as possible at the bedside of the patient. A discussion of the relative advantages of the laboratory, the lecture and the text-book as methods of medical education cannot be undertaken without a recognition of the fact that this education has a double object. In the first place the faculties of the student are to be so trained that he may observe carefully, reason correctly, study effectively and judge wisely; in other words, he is to be "trained for power" to use President Eliot's phrase. In the second place there must be imparted to him a sufficiently large fraction of the acquired medical knowledge of the time to make him a safe custodian of the health of the community. Which of these two objects is the more important is a question which we need not now discuss, but even if we grant all that is claimed by the advocates of training for power it is evident that the constantly increasing range of subjects with regard to which an educated physician must be informed will greatly reduce the time which, in the curriculum of a medical school, may properly be devoted to courses of instruction not intended to impart direct and valuable information. In fact, "training for power" should be largely a function of the academic department of a university, and when undertaken in a professional school, should be so directed as to impart at the same time the greatest possible amount of useful information.

Let us now consider how far the didactic and the laboratory methods of instruction are each adapted to secure these two objects of medical education. For the purpose of training for power no one can doubt the value of the laboratory method. Contact with the phenomena themselves and not with descriptions of them has a stimulating effect on the mind of a student, the

importance of which it is difficult to exaggerate, but it does not follow from this that the lecture, the recitation and the text-book are worthless as methods of training. It is here that some of the advocates of laboratory methods have committed what appears to me a serious error such as is too apt to characterize all reform movements, the error, namely, of assuming that, because one proposition is true, another proposition, not logically inconsistent with it, must be untrue. "These gentlemen," as Professor Howell[13] has expressed it, "having become possessed of the golden truth that the best knowledge is that which comes from personal experience, seem disposed to deny all value to knowledge communicated from the experience of others." We are told, for instance, by Dr. Burr,[14] that the didactic lecture "dates from the time when printing was unknown and manuscripts were rare and almost priceless and the only means of communicating knowledge was by word of mouth. To-day it is in large part an anachronism, because the time devoted to it could be put to better uses."

In his able address[15] at the last Yale University Medical Commencement my colleague, Dr. C. S. Minot, expressed himself as follows: "The very best that can be said of a lecture or a book is that it describes well the knowledge which some one possesses. There is no knowledge in books. . . . A book or a lecture can serve only to assist a man to acquire knowledge with lessened loss of time. Knowledge lives in the laboratory; when it is dead we bury it decently in a book. . . . A lecture is a spoken book." I venture to believe that Professor Minot's students will hardly agree with this estimate of the lifeless character of either his written or his spoken instruction.

In place of these rather disparaging views of the importance of a didactic lecture, I am inclined to accept Dr. Weir Mitchell's[16] opinion that "The best lecturing does not so much think for you as invite you to think along suggested lines of enquiry." If, as has been claimed, "the passive attitude of listening does not demand of the students intelligent thought"[17] the fault must lie with the lecturer and not with the method of instruction. In every department of medicine advanced instruction necessarily deals with subjects which lie within what Foster has called the "penumbra" of solid scientific acquisition and about which conflicting views are therefore certain to be held. It is in inviting thought with regard to the evidence on which these views rest that the experienced lecturer has his best opportunity to train the minds of his hearers. Other opportunities are also afforded by the historical presentation of subjects about which differences of opinion no longer exist, for there are few things more instructive than to follow up step by step the lines by which our knowledge has advanced, noting the marks which distinguish the paths which have been trodden successfully from those which have turned out to be "No Thoroughfare." Even better opportunities for mental training than those which the lecture room presents are afforded by the recitation, for here the minds of the teachers and the pupil are brought most closely into contact, the pupil's difficulties are appreciated by the instructor and the point of view of the teacher can be learned by the pupil. It has always seemed to me that no higher enjoyment falls to the lot of the teacher than that which he experiences when, by a series of carefully considered questions, he leads his pupil onward from the known to the unknown and notes the gleam of intelligence which illumines his countenance as a subject, previously obscure, becomes clear, as a result of his own mental operations guided by his teacher's skilful questions. It thus appears that no monopoly of opportunities for mental training can be claimed for the laboratory method of instruction.

We must next enquire: What are the relative advantages of the laboratory and didactic methods as means of imparting information? Here we at once perceive that a great deal will depend upon the kind of information to be imparted. Certain subjects are much better adapted than others to be taught in the laboratory. The student of anatomy, for instance, can secure the greater part of the information which he needs by laboratory methods, *i. e.*, in the dissecting room, although a short course of lectures on descriptive anatomy in which an experienced teacher emphasizes the salient features of the subject will probably always be indispensable. Physiology and Pathology (including physiological chemistry, pharmacology and bacteriology) are subjects in which laboratory instruction may be unquestionably much more freely used than is customary at the present time. The recent experience of the Harvard Medical School, in which the laboratory courses in these subjects have been greatly extended, has furnished conclusive evidence of the value of this method of instruction as a means both of imparting information and of stimulating the mind of the student. It must be remembered, however, that, as Dr. Welch[18] has said, "laboratory methods are extremely time taking and are not adapted to teach the whole contents of any of the medical sciences. It is, of course, hopeless to attempt to demonstrate practically all of even the more important facts that the student should learn."

Moreover, observed facts are often apparently inconsistent with each other. Equally competent observers differ in their interpretation of them. Yet, because the last word of science has not been spoken on these subjects, it would be a mistake to exclude them from the medical curriculum. The student should rather be carefully instructed as to researches which have not yet yielded definite results. The most profitable way of reconciling conflicting observations should be pointed out, and he should be shown in what direction the search for truth can be prosecuted with the best prospect of success. He will then be able to appreciate the value of new observations and to assign them to their true position.

Instruction of this sort can, of course, be given only by an experienced lecturer who has mastered the subject of which he treats. It is in this kind of teaching and in the exposition of those facts and principles which cannot properly be made the subject of laboratory instruction to students that the didactic lecture of the future will probably find its principal field of usefulness. In the latter direction, however, the field is more restricted than might, at first, appear, for the amount of practical work that can be successfully performed by first and second year students in a physiological or in a pathological laboratory is surprisingly large. In the physiological department of the Harvard Medical School, for instance, during the current academic year each pair of students in a class of 180 has been furnished with a kymographion, a capillary electrometer, a moist chamber, an induction coil, unpolarisable electrodes, etc., and the most important experiments of nerve muscle physiology have been successfully repeated. The fundamental experiments in the physiology of the circulation, respiration, etc., are to be performed in a similar manner. In the pathological laboratory the students, working in sections of ten, have had an apportunity of producing for themselves and studying experimentally the most important pathological degenerations. They have also studied in the same way the principal infectious diseases. In the anatomical department also, while the number of didactic lectures has been diminished, the whole class has had largely increased faculties for the practical study of bones and of various special organs.

Still, after making due allowance for the legitimate expansion of laboratory teaching, it is probably safe to say that a systematic course of lectures in each of the medical sciences will never be found to be superfluous and that the day is probably far distant when the lectures will be merely "explanatory of the experiments."[19]

We have thus far considered the relative advantages of didactic and laboratory methods in teaching the medical sciences, but the agitation in favor of more objective teaching has extended also to the clinical departments of medicine and the organization of "clinical laboratories," in which the cases of hospital patients may be studied by the most refined methods of physiologic and pathologic research, is a natural outcome of this agitation. In fact, however, so far as instruction is actually given at the bedside, clinical medicine has always been taught by means of object lessons. In many of our schools this instruction has been supplemented by so-called "conferences," exercises in which a student reports before the class a case which he has himself examined, giving diagnosis, prognosis and treatment. The subject is then discussed by the class and finally by the instructors.

Wherever actual cases of disease are thus utilized for teaching purposes the instruction is always likely to be more or less haphazard and unsystematic, for the diseases studied will be those of which actual cases happen to be available. To remedy this difficulty it has been recently proposed[20] to substitute the study of hospital records of cases for the examination of the cases themselves, a method quite analogous to that known as the "case-method" which has long been used with great success in training students in the Harvard Law School. It will thus be possible to group cases so that they will throw light upon each other and, though the student will miss the stimulus of contact with the actual patient, the method presents so many distinct advantages that it will doubtless commend itself to many teachers of clinical medicine and of theory and practice.

It is thus evident that the reaction against purely didactic methods of instruction is well under way. It is a movement to be heartily welcomed, for there can be no doubt that medical students have been and still are too much lectured, but, like all other reforms, it should be carefully guided lest useful as well as useless things be swept away. It should be borne in mind that it is quite as easy to abuse the laboratory as the didactic method of instruction and that in all schemes of education a good teacher with a bad method is more effective than a bad teacher with a good method. As Professor Howell[21] has well remarked, "courses of lectures, that, if analyzed would be found to be top-heavy and lop-sided, and otherwise possessed of an instability that should have insured failure, have been saved and made instruments of great value by the mere earnestness of the teacher."

Distribution of Work.—The next question which I shall ask you to consider is that of the proper distribution of the work of a medical student. Thirty years ago no such question seems to have presented itself to the minds of instructors in medicine. The medical faculties of that time contented themselves with providing, each year, courses of lectures covering all the departments of medicine, as they were then understood, and every student was expected to attend as many of the lectures as he saw fit. Between 1870 and 1880 the fact that there is a natural sequence in medical studies became generally recognized and graded courses of instruction were established in the principal medical schools of the country. The grading was not, however, carried sufficiently far. Thus instruction in both anatomy and physiology was generally given simultaneously through the whole of the first year, though the knowledge of structure should logically precede a study of function.

The time seems now to have come for taking another step in grading medical instruction and, during the academic year now drawing to a close, instruction in the Harvard Medical School has been given in accordance with a plan of which the guiding principles are concentration of work and sequence of subjects. Thus in the first half of the first year the students devote themselves exclusively to the study of anatomy, including histology and embryology. In the second half

year they are occupied with physiology, including physiological chemistry, while in the first half of the second year pathology, including bacteriology, engages their attention. It is perhaps too early to pass a final judgment upon the value of the method, but thus far both teachers and students seem to regard it as a success. The result seems to have justified the opinion of its advocates that the work of the student would be made "easier by concentrating his thoughts upon one subject instead of dissipating his attention upon many subjects."[22] Nor have its opponents found any justification for their fears that the average brain would become fatigued and unreceptive by too close application to one subject, for the sciences of anatomy, physiology and pathology "are not narrow hedged-in areas but rather broad and diversified domains composed of many contiguous fields,"[23] in passing from one to another of which the student may rest his mind without interrupting the continuity of effort essential to effective work.

An obvious objection to this method of concentrating instruction is the large amount of work which it imposes upon the instructors. There is no doubt that the labor of teaching every day in the week may task the powers of even the most enthusiastic instructor, but it has been found that the laboratory work which has occupied from two to three hours every forenoon has been conducted with much less fatigue than was anticipated. In fact, students, when supplied with printed directions for work and with the necessary apparatus, need remarkably little supervision. In the physiological laboratory it was found that one instructor could readily supervise the work of fifteen pairs of students, and the experience in the anatomical and pathological departments was of a similar sort.

Examinations.—Closely connected with the questions of method of instruction and of distribution of work is the subject of examinations. With regard to these tests of our educational methods opinions vary even more widely than with regard to the methods themselves. There is only one point, as Professor Exner has remarked, on which teachers are practically united and that is "that an examination is a necessary evil." Every examiner knows only too well that an examination is but a very imperfect test of knowledge, but few are ready with any suggestion of a substitute. Much of the confusion which prevails in the discussion of this subject would be removed if the objects to be secured by an examination were more clearly apprehended. Professor Exner[24] points out that examinations may be broadly divided into two classes, *viz.*, the *Controlprüfung*, to test the faithfulness with which the student has performed his daily tasks, and the *Reifeprüfung* to determine the amount of his permanently acquired knowledge of medical subjects.

The examination, which, at the end of the year, covers the whole ground of the previous twelve months' instruction and which is so common in our schools, belongs to neither of these two classes and is really a concession to a very natural wish of the student to get the examination "out of the way" while the subject is still fresh in their minds. Having little justification from an educational point of view, we may hope to see it abandoned when the extension of laboratory methods provides in the notebook and graphic records of each student the evidence of his daily work and thus either renders a further examination unnecessary or prepares the way for a final test of his fitness to receive his diploma of M.D. Whether the written or the oral examination affords the better method of applying this test is a question about which opinions vary. The fact that some persons can write more readily than they talk, while others can talk more readily than they can write, seems to be a reason for providing a mixed method of examination in which each individual may have an opportunity of appearing to the best advantage.

Conclusions.—If the views here presented are well founded we may expect that a medical school of the first rank will, in the immediate future, be organized and administered somewhat as follows:

I. It will be connected with a University but will be so far independent of university control that the faculty will practically decide all questions relating to methods of instruction and the personnel of the teaching body.

II. It will offer advanced instruction in every department of medicine and will therefore necessarily adopt the elective system of some sort, since the amount of instruction provided will be far more than any one student can follow.

III. The laboratory method of instruction will be greatly extended and students will be trained to get their knowledge, as far as possible, by the direct study of nature, but the didactic lecture, though reduced in importance, will not be displaced from its position as an educational agency.

IV. The work of the students will probably be so arranged that their attention will be concentrated upon one principal subject at a time and these subjects will follow each other in a natural order.

V. Examinations will be so conducted as to afford a test of both the faithfulness with which a student performs his daily work and of his permanent acquisition of medical knowledge fitting him to practise his profession.

If I have clothed these conclusions in the language of prophecy it is because the title of my discourse has laid this necessity upon me. In forecasting the immediate future, I have borne in mind the history of the immediate past, and, if I have failed to read aright the indications of the lines on which our medical schools are to advance, it must be remembered that the development of a biological science and of its dependent arts not infrequently takes place in totally unexpected directions, thus introducing into the

path of educational progress perturbations which may well defy prediction.

BIBLIOGRAPHY.

[1] American Practitioner and News, June 26, 1897.
[2] W. James, Talks to Teachers, p. 7.
[3] Wiener klinische Wochenschrift, 1900, No. 3.
[4] New Englander and Yale Review, September, 1888.
[5] Presidential address. American Society of Naturalists, December, 1900. Science, January 5, 1900.
[6] Annual reports of the President and Treasurer of Harvard College, 1898-99, page 10.
[7] The American College in the Twentieth Century. Clement L. Smith, Atlantic Monthly, February, 1900.
[8] C. W. Eliot, Atlantic Monthly, October, 1899, p. 443.
[9] C. L. Smith, " " February, 1900, p. 219.
[10] Bulletin Harvard Medical Alumni Association, No. 8, p. 40.
[11] See Science, N. S., Vol. viii, No. 209, p. 921, and Boston Medical and Surgical Journal, December 29, 1898.
[12] See address by Henry Hun, M.D., Albany Medical Annals, October, 1898.
[13] The Michigan Alumnus, January, 1900, Vol. vi, p. 143.
[14] Philadelphia Medical Journal, October 21, 1899.
[15] Science, July 7, 1899.
[16] University Bulletin, Vol. iii, p. 85., Phila., December, 1898.
[17] W. B. Cannon, A.M. The case method of teaching systematic medicine. Boston Med. & Surg. Journ., January 11, 1900.
[18] Higher medical education and the need of its endowment. The Medical News, July 28, 1894.
[19] Porter, Boston Med. & Surg. Journal, December 29, 1898.
[20] W. B. Cannon, A.M., loc. cit.
[21] Loc. cit., p. 144.
[22] Minot, l. c. Reprint p. 22.
[23] Porter, l. c. Reprint, p. 12.
[24] Loc. cit. Reprint, p.

TRUTH IN MEDICINE.[1]

BY E. G. JANEWAY, M.D.,
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PRESIDENT OF THE ASSOCIATION OF AMERICAN PHYSICIANS.

FOR the fifteenth time it devolves upon the President to welcome the members of the Association to that gathering which has its chief interest in meeting those engaged in like work. We will hear from them that which during the year past has seemed, of all that they have met and observed, the most fit to bring before colleagues interested in learning some new fact as regards the old diseases or some new interpretation of the phenomena of those maladies.

Fortunately we also have among our number those who are able to give themselves up to the study of pathology and from whom in the past we have learned much of the pathological processes which underlie disease, who will at this meeting continue their good work. Of late we have also been fortunate in having members who have given anxious thought to the chemical side of the study of the alterations of disease and who will again strive to enlighten us on this the most difficult of the questions with which we have to do. Each of us who has attended the past meetings must admit having received much of benefit from the presentations and the discussions of our associates. Your President of this year looks back with regret at certain of the opportunities which he wasted in the past, under the stress of his professional work, and he only alludes to it in passing that he may stimulate the younger members to so arrange the year that they may find the time to both give and receive knowledge, thus making the meetings of this association more valuable with each passing year. Let us each endeavor to make this Association so far as in us lies, as regards those matters which it falls under our province to consider, the equal of any and the inferior to none throughout the world. If we are each possessed by such a noble spirit of rivalry I am sure that our Association will not only maintain, but will surpass in the future that high regard in which it has been held.

Your President, in the fear that not enough of the members would bring material, sent out as you know two appeals. Results show that he was not sufficiently aware of the deep interest which you had in the success of our meeting on this the year of the Medical Congress. The calendar as you have read is more than full, and in so far as he may have been responsible for this the motto that brevity is the soul of wit is forced home upon his inner consciousness. It is his duty as well as his privilege to so allot the time that each member may be heard, and not himself to consume such time by his general introductory remarks as to infringe upon that which is the moral right of the members under the circumstances. But for this he would have been tempted to touch upon the theme "Truth in Medicine." This could have been handled under such heads as truth in statistics; truth in diagnosis; truth in therapeutics, and truth in pathology. Any society which has its annual meetings in the city of Washington, a city named after a man whose name could stand as a synonym for truth—should so far as its members are concerned, need no other reminder of the value of truth; nor do I think that the members of this Association need even this reminder for I take it we are all seekers after truth. Would that all who come to Washington could be so impressed by his name that only the truth should be spoken in this city, or only honest methods followed in the pursuit of power, place, and gain. But time urges and we now turn to the work of the Association.

[1] Opening Remarks of the President.

PERFORATING DUODENAL ULCERS.*

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THE interest that has been lately directed toward the surgical treatment of gastric perforations has also been turned to the operative relief of the allied round or peptic ulcer of the duodenum. This affection is much rarer than the ulcer of the stomach, is much more difficult to properly diagnosticate, and is more apt to be confounded with other more distant surgical lesions, such as appendicitis, etc.

Its site is in the upper part of the duodenum, and according to Morot[1] and Vonwyl[2] it is always situated within one and one-half inches of the pylorus; but Schwartz[3] gives one case where the perforation existed on a level with or a little below the ampulla of Vater and thus allowed a free escape of bile into the peritoneal cavity. The figures given by recent authorities show that in the

* President's Address.

262 collected cases of Collin[4] the perforation occurred 242 times within 2 inches of the pylorus, in the descending portion, 14 times, in front of the aorta, 3 times, and in the ascending portion, 3 times. Or, expressing the same a little differently, 162 of the 262 cases were situated at 2-4 mm. from the pylorus; 75 close to it; 4 encroached on the pylorus itself, and 2 extended through the pylorus to the duodenum and to the stomach. Perry and Shaw[5] found in 141 cases of duodenal ulcer, 123 in the first part of the duodenum, 16 in the second part and only 2 in the third part.

Number.—These ulcerations are usually single. Collin says that one ulcer was found in 80 per cent. of his cases; two ulcers in 11 per cent.; and three or four ulcers in 4 per cent. Morot in 22 cases found that 18 had a single ulcer; two, 2 ulcers; one, 3 ulcers, and one, 4 ulcers.

Location.—These perforations are encountered most frequently on the anterior wall. Oppenheimer[6] in 15 cases noted that the perforation had taken place in the anterior wall 11 times; 3 times posteriorly and once superiorly. Of the 119 cases of Collin in which the first portion of the duodenum was perforated, in 68 it occurred on the anterior wall of the bowel; in 39 on the posterior wall; in 10 on the superior, and in 1 on the inferior portion. In 8 ulcers perforating in the second portion of the bowel, 5 occurred in the internal wall; 2 in the posterior and one in the external wall; and in the ulcers presenting in the third part of the duodenum, 4 in number; in 3 the anterior and superior walls were involved, and in 1 the posterior wall. This is of considerable surgical importance. The anterior perforations are, for obvious anatomical reasons, less likely to be closed off by adhesions and, hence, a free and rapid involvement of the peritoneal cavity takes place in openings here situated. Beckman[7] states that half the cases of duodenal ulcer die from perforation into the peritoneal cavity.

Perforation is said to take place 180 times in Collin's 262 cases, or in 69 per cent.; Chvostek, however, places the frequency of perforation at about 42 per cent. of the cases. In these 262 cases there was a generally diffused and fatal peritonitis, 125 times. Occasionally in anterior openings, but more commonly with the perforations existing elsewhere, adhesions or ulcerations with abscess and hemorrhage of the duodenal wall or adjacent organs have been encountered. Examples of such complicating lesions are subphrenic abscess which follows more commonly a perforation in the superior wall of the horizontal portion of the duodenum (according to Oppenheimer). Liver and pancreatic adhesions are at times met with (Oppenheimer gives 6 cases and Collin 38 cases of such adhesions). Perforations into the gall-bladder have been reported, but more important and dangerous are the ulcerations into the aorta (Stich[8] 2 cases), or the vena porta (2 cases, Rayer and Habershon), or the superior mesenteric vein (Warfinger), or the hepatic artery (Vonwyl). The ulceration has been also known to invade the adjacent colon (2 cases, Murchison and Saunderson).

Sex.—These perforations are more common in men than in women, about 79 per cent., according to Collin, occurring in males. From the tables of Morot, Kraus, Lebert and Chvostek I have gathered 176 cases of duodenal ulcers, and of these 144 were in men and 30 in women. This has been explained by Boas[9] to be due to the rougher food eaten by men and to their addiction to alcohol and tobacco.

Causes.—A coarse diet and alcoholic liquor, he thinks intensifies the acidity of the gastric juice and this acts unduly on the granular mucous membrane of the duodenum, which is not protected until the alkaline bile and pancreatic fluid is poured into the intestine at the opening of Vater. Koch and Ewald, by giving to animals 5 per 1000 HCl, caused duodenal ulcers to appear. Pyloric spasm, Talma states, produces necrosis and anemia of the membrane there. On the other hand, alcoholics are not found to be prone to duodenal ulcer, and although the spasms and lesions of gastric hyperacidity which are now accepted as a causative of stomach ulcer will doubtless apply in many instances to the development of a similar duodenal damage, there are other causes for duodenal ulceration to be mentioned in addition to the foregoing.

The principal and best known, although now somewhat disputed factor in their etiology is the influence of external *burns.* Holmes,[10] for instance, states that in 125 cases of burns, 16 cases of duodenal ulcer were found; Perry and Shaw in 149 cases of burns, met with duodenal ulcers five times; and in Collin's 297 cases of duodenal ulcer he states that burns produced the ulceration in 38 instances. According to Holmes the duodenal ulcerations after burns present themselves from the seventh to the fourteenth day, but Porfick found in one instance a duodenal ulcer within 18 hours after the reception of the burn. Curling also had a case where symptoms of duodenal ulcer were recognized one day after the burn, and the autopsy confirmed the diagnosis.

The explanation most accepted at the present day is that this complication of a burn is due to septic infarctions such as may be developed in frost-bite, of which Billroth and Adams each cites a case, or in erysipelas, 8 instances, or in tuberculosis (Latham). In the case where trichinosis (Ebstein), or heart or kidney disease, or cirrhosis or hepatic or other carcinomata (Latham) exist, it is not quite so easy to trace the connection, although even here thrombosis has largely to deal with the question. The recognized explanation offered by Hunter,[11] and often quoted, seems inadequate to elucidate the relation between a cutaneous burn and a duodenal ulcer. This observer proved that in animals treated by injections of toluylendiamene the bile was so changed that when discharged into the duodenum ulcerations rapidly developed. His idea, therefore, was naturally that the alteration of the cutaneous covering so altered the bile as to beget the compli-

cating duodenal ulcerations. Unfortunately, duodenal ulcers are so rarely met with on a level with or below the bile discharge into the bowel that this at once disposes of the need of calling on the liver and pancreas as accomplices in their production. That septic infarction is the most probable cause of duodenal difficulties after burns may also be fairly inferred by the later collection of Lockwood, in which, in 138 cases of burns treated with more or less approach to antiseptic idea, the complication of duodenal ulcer was noted in but one instance. A cancerous ulceration is almost unknown, but 4 cases (Eichert, Ewald, Schrotter, and McKenzie) are recorded.

Frequency.—According to statistics, a duodenal ulcer is a rare lesion. Collin, whom one is compelled to quote by the worth of his collected cases, could find only 26 cases in a range of 10 years. Houze[12] in three additional years could add only three more cases, although Darras[13] more than one year later found 5 others. Since attention has been given to the subject and particularly to the surgical aspect of it by the present writer in 1896, when 9 cases were reported as having undergone surgical treatment, there have been reported 41 operations for this disease.

The relative frequency as a cause of death deduced from autopsies is as follows:

Williget, 1600 sections with 74 gastric ulcers and 2 duodenal.

Starke, 384 sections with 36 gastric ulcers and 3 duodenal.

Grunfeld, 1150 sections with 124 gastric ulcers and 4 duodenal.

Can be supplemented by:

Stein's 3085 sections with 89 gastric ulcers and 12 duodenal.

Vonwyl's 12,806 sections with 98 gastric ulcers and 3 duodenal.

Latham's 8192 sections with no gastric ulcers and 12 duodenal.

Perry and Shaw's 17,652 sections with no gastric ulcers and 70 duodenal.

New York Hospital (unpublished), 1000 sections with no gastric ulcers and 2 duodenal.

Total, 49,369 sections with 421 gastric ulcers and 108 duodenal.

Or about .2 per cent. in frequency.

Kinnicutt,[14] however, in 30,000 autopsies which probably included many embraced in the above table, has given a rather higher percentage of frequency, placing it at 0.4 per cent. Although the proportion is a small one, stress must be laid on the fact that from 40 to 70 per cent. of these ulcers perforate, with an almost invariable fatal result. The relative proportion of gastric to duodenal ulcers is 12 to 1, Burwinkel.

Age.—It is encountered at all ages. Chvostek in 87 autopsies on children under 10 years of age found 5 duodenal ulcers, of which 1 was seen in a 7 weeks-old child, another in a child 4 days old, and a third in a babe of 3 hours. Collin's table is the most complete in this respect, and it is here presented. In 297 cases of duodenal ulcers they were met with:

Under 10 years of age, 42 times.
Between 10 and 20, 24 times.
Between 20 and 30, 43 times.
Between 30 and 40, 52 times.
Between 40 and 50, 46 times.
Between 50 and 60, 41 times.
Between 60 and 80, 28 times.
Between 81 and 95, 3 times.

Progress.—It has already been stated strongly that nearly all perforations of the duodenum will prove fatal from a generalized peritonitis unless surgical intervention should relieve the patient. What this consists of, what are its results and its difficulties, will be considered a little later. At present one must take account of the somewhat encouraging fact that all duodenal ulcers do not go on to this severe complication of perforation. At 70 autopsies, Perry and Shaw found decided evidences of repair in nearly 50 per cent. of the cases, and Collin also recorded 39 instances of cicatrized ulcerations. These cured ulcers may prove innocuous but they can, as in the stomach, narrow to a dangerous degree the lumen of the intestine and even encroach on the bile opening, or make such traction on it as to bring about gastric and hepatic dilatations. Some of the most brilliant surgical triumphs have been obtained in relieving such obstructions.

Symptoms.—As shown by Schwartz, symptoms of a non-perforated duodenal ulcer are frequently very slight. In 20 out of 25 instances of perforation the patients were in apparent good health or so slightly indisposed that they had not consulted a physician. In only 5 patients were there previous stomach symptoms; of these one was thought to have dyspepsia, and two to have a gastric ulcer. In my own collection of 51 cases, treated by operation gastric symptoms previously existed in 25 out of 34. The usual signs may be given as follows:

Pain, when characteristic, occurs several hours after eating and may be slight or severe and present itself just below the gall-bladder and may reach to the median line or to a level with the navel. Many times the pain is absent. Beckmann in 80 cases found 16 in which little or no pain existed. Pressure, particularly over the region to right of the twelfth thoracic vertebra, occasionally elicits pain. Swallowing of a sour lemonade or a strong alcoholic drink may arrest the pain by bringing about a pyloric contraction, but Pagenstecher[15] denied the value of this test.

Vomiting is present in about 17 per cent. of the cases but it is of a reflex character. It is of diagnostic importance if, like the pain, it shows itself from an hour or so up to several hours after a meal and the matters rejected are broken-down food often mixed with bile and blood. The right shoulder pains are noted by Schwartz as occasionally to be recognized. According to Vonwyl and Buequoy, the pains are often slight from the comparative immobility of the duodenum and vary from queer indescribable sensations to severe radiations of distress. Vomiting when it occurs relieves the pain.

Jaundice if present, which is rare, may be due to simple duodenal tumefaction or to cicatricial contraction of the papilla.

Hemorrhage is to be expected in about one-third of the cases of non-perforating ulcers. Probably it is even more frequent than this as Oppenheimer found blood in the stools of one-half of his 34 cases, and Krauss says it occurs even more frequently than in this ratio. This bleeding can be severe and show itself by mouth as well as per rectum. It can speedily prove fatal as larger vessels are opened than by a gastric ulcer. Usually the blood is discharged from the bowels in a tarry condition which bespeaks a high origin of the hemorrhage and an exposure of some duration to the action of intestinal secretions. This is spoken of as melena. Its color may be, however, a bright hue, and recently, with Dr. Peabody, the question of the presence of a duodenal ulcer in a patient with intestinal hemorrhage and right-sided epigastric pain and distress sometimes after eating was negatively decided because the blood discharged per anum was of a bright red color and unclotted. As the patient, moreover, had hemorrhoids the possibility of this origin led to the confusion in diagnosis. This escape of fresh blood unchanged in the bowels is recognized by Vonwyl and some emphasis should hereafter be placed on this possibility. The profusion of the hemorrhage may be much beyond that encountered in gastric ulcer, for larger vessels may be involved. Collin gives 12 instances in which the blood came from the pancreo-duodenal artery; three times the gastro-epiploica dextra was opened into; twice, the pancreatic artery; the aorta twice; the vena porta twice; the hepatic once; and once the superior mesenteric vein. Pagenstecher states that the ulcers on the posterior wall are more apt to bring about hemorrhage than the anterior ones as the vessels are more abundant and larger there. Burwinkel[16] says that, excepting in vicarious menstruation and typhoid fever, intestinal hemorrhage in large amounts is very rare and should excite suspicion of gastric or duodenal ulcers. This writer, in spite of all that has been advanced by Nothnagel, Ewald, Lemke, and latest of all, Kinnicutt,[17] that in the great majority of cases a differential diagnosis from gastric ulcer is impossible, claims that by a careful study of the symptoms he has been able to diagnose 5 cases of duodenal ulcers in the last five years.

The following contrasting symptoms have been grouped by Vonwyl as an aid to this end: *Gastric ulcer:* (1) More frequent in woman, 25th-50th year. (2) Pain promptly after eating. (3) Relieved by vomiting. (4) Frequent biliary, mucous, and food vomiting. (5) Marked dyspeptic symptoms. (6) Frequent bloody vomiting. (7) More seldom bloody stools. *Duodenal ulcer:* (1) Occurs most frequently in males. (2) Pain in right hypochondrium or to the right of parasternal line. (3) Comes on 2-4 hours after meals. (4) No relief by vomiting; latter not frequent. (5) Bloody stools (melena or bright blood) more common than bloody vomiting. (6) If jaundice is present this would contribute to the diagnosis.

That medical and surgical education in this line is progressing has also been brought out in the cases of operations which form the basis of this paper. Here it will be seen that, notwithstanding that the greater part of them have been treated as of appendical or other origin, surgeons, awake to the possibilities of the case, are making shrewder diagnoses and the reproach which was good up to a year ago, that no operation for a previously recognized perforated duodenal ulcer had yet been performed, no longer holds good. It may be expected that as the detection and treatment of a perforated gastric ulcer has so rapidly and so satisfactorily progressed, from 1892, when the writer was only able to add to his first operation of this kind but 4 other instances, while now over 100 cases each year are operated on with a mortality that has fallen (if operated on within 12 hours) from 39 per cent. to 17 per cent. (Keen[18]). The picture is a far different one when the duodenal ulcer perforates, and, anteriorly, which is the most common site of this complication. Here there is usually no withholding adhesion, and a rapid invasion of the peritoneum is probable.[19] If the stomach is yet filled, the extravasation may take an anatomical course somewhat in the order spoken of by Pagenstecher, and which is in accord with my own analogous clinical experience in 3 perforations of the gall-bladder. Fluids escaping from the duodenum or gall-passages flow at first between the liver and the colon and thence along the ascending colon toward the iliac fossa; from this point it may pass over to the sigmoid flexure or into the pelvis. Given, therefore, such a free course and with a plentiful pouring out of an acid fermenting food and gas through a direct although small (2 to 8 mm.) opening, the symptoms presented would naturally be severe.

Great *pain* is usually felt at the epigastrium or to the right of this region. As was noted here 26 times in 47 of my cases, it has a few times been observed at the umbilicus and in the left side; but in 23 others of the 47 instances it was simply recorded as abdominal pain. Vomiting often follows the attack of pain. It occurred in 28 out of 34 instances. Shock is not often met with but may be severe and fatal. Peritoneal symptoms rapidly develop with a tendency in some cases to be localized in the upper part of the abdominal cavity and in the right side; when these signs show themselves mostly to the right and at or below the level of the umbilicus, the picture necessarily simulates an appendicitis. When the liver dulness has been dissipated up nearly to the mammary line, air extravasation may be suspected, and, when accepted as present, it will aid in concentrating the diagnosis. The symptom of liver resonance, unless marked, is so often found to be due to a distended colon that it should not be much relied on.

In considering the diagnosis of a perforated duodenal ulcer as just given, I cannot but feel

that more weight and attention should be given first to the previous history, which shows, contrary to the opinions of many previous observers, that in the 51 collected cases of operations for the relief of such conditions there was a history of gastric or dyspeptic symptoms given in 25 out of 34 instances, where this point was noted; secondly, and also important, is the fact alluded to on a previous page that the initial or early pain was developed in 26 instances out of 47 in the epigastrium; and in the right hypochondrium 13 times. The third factor of value in the diagnosis, as well as the treatment of the symptoms of perforation peritonitis, whether from stomach, duodenum, gall-bladder, appendix, or any other part of the intestinal tract, is the early resort to an exploratory incision. This need of an early solution of the site of a perforation has been clearly shown in the cases of a gastric perforation in an article[20] embracing 78 cases operated for this trouble. The mortality clearly depended on whether the patient underwent surgical intervention within 24 hours from the inception (*i. e.*, the pain) of the perforation. This is yet more strongly marked in the latest collection of this class of troubles by Mayo,[21] who states that in 429 cases of gastric perforations those operated on in the first 24 hours were 82 where 47 recovered; 35 died (42 per cent.); and that in operations done after that period over 70 per cent. of the cases died. In duodenal perforations the same outcome is observable. In the 51 collected cases of duodenal ulcer perforations herewith presented, there were 25 cases where the lesion was recognized and closed at the operation; of these, 13 underwent operation after 30 hours delay and all died; of 12 others operated on within that time 8 survived, giving thus only 33.3 per cent of mortality. *Only*, I say and with much satisfaction, since it marks an improvement on the statistics of Pagenstecher, which gave a mortality of 60 per cent. in the found and sewn up duodenal ulcers that he had collected. Of equal value as illustrating the increasing alertness of the surgeon is the fact that prior to 1895 in the 28 cases reported up to that time in which laparotomy was done, in 15, or 75 per cent., the ulcer was not found; in 5, or 25 per cent., it was found and sutured. In only 2 cases, or 10 per cent., was the possibility of a duodenal perforation considered. Contrast this with the 31 cases operated on since 1895, when the surgery of gastric ulcer began to be developed. Of these 31 cases the perforation was not found in only 11 per cent. It was found and sutured in 20 cases, or 65 per cent. Its presence was considered in diagnosis in 11 cases, or 35 per cent.

Another indication showing the advance in surgical art is the circumstance that it has been possible in 13 of the more recent instances to either arrive at a correct pre-operative diagnosis or to make the alternative diagnosis varying between a duodenal and a gastric perforation. The difficulties that have been experienced are succinctly shown in the following statement:

Diagnosis Wrong: Ulcer Not Found.—Diagnosed as acute peritonitis, 8 times; as appendicitis, 15 times; as intestinal obstruction or appendicitis, 1 time; as strangulated hernia, 1 time; as hydronephrosis, 1 time; making a total of 26.

Diagnosis Wrong: Ulcer Found.—Diagnosed as acute peritonitis, 5 times; as intestinal obstruction, 4 times; as appendicitis, 3 times; total, 12.

Diagnosis Right or Approximately So: Ulcer Found.—Diagnosed as duodenal ulcer, 5 times; as gastric or duodenal ulcer, 6 times; as appendicitis or duodenal ulcer, 2 times; total, 13.

For the treatment of a duodenal ulcer the medical means applicable to the management of a gastric ulcer also hold good. It is but seldom that surgical aid is called for before perforation has occurred, but the cases reported by Codevilla[22] are of much surgical interest and instruction. This surgeon, for the relief of symptoms that fairly well pointed to an intractable duodenal ulceration, resorted to a gastro-enterostomy in two cases with a cure as the result of his intervention.[23] In some cases of perforation the shock and progress of the infection are so rapid as to bring about death in a few hours. Stevens[24] quotes a case where a fatal issue occurred within 21 hours after the first symptom (sudden pain) had shown itself.

Where the diagnosis has happily been narrowed down to a perforation of either the stomach, duodenum or gall-bladder, the incision to be advised is in or along the edge of the rectus muscle, 4-6 inches in length, and starting rather low down on the abdominal wall, so as not to reach much above the liver edge, but to extend far enough downward to easily get below the transverse colon which might be necessary. Supplementing this incision in its upper third, another transverse one in the skin to the left or toward the median line is advisable. This will permit the cross division of the fascia covering the right rectus muscle, which is in turn to be pulled to the left when its posterior sheath with the peritoneum is also to be divided. This gives a satisfactory and largely increased exposure of the parts beneath, and the subsequent suture of the upper and lower sheath of the rectus, with the full replacement of the muscle, adequately restores the integrity of the abdominal wall. This incision I have used many times in operations on the gall-passages and in numerous instances of suppurating appendicitis when increased space was necessary.[25]

If gas or food material escape when the abdomen is opened the surgeon's action is rendered more certain, and a rapid and thorough inspection, after wiping away any obscuring fluid, of the gall-bladder, duodenum and the anterior walls of the stomach, can be disclosed. If nothing is visible in these regions, the examination of the posterior gastric wall can be accomplished by either tearing through the gastrocolic omentum, or by turning up the omentum and large

bowel and entering the lesser omental cavity through the mesentery as in posterior gastroenterostomy. From the lower end of this wound, which is large enough to admit the hand, in many instances the appendical region can be explored if it should be necessary, although probably if this should be involved a separate incision might be more suitable. If a duodenal perforation exist it will generally be found on the anterior wall of the duodenum as a small round opening, rarely beyond one-fourth of an inch in diameter, with comparatively thin edges and rarely adherent to any adjacent intestine. Gas or fluids have frequently been seen passing from the opening and occasionally bile, which latter may also stain the peritoneal extravasation. Mayo has suggested that an acid reaction of the peritoneal effusion might help in suggesting, prior to its discovery, a gastric or duodenal opening, but, as the inflammatory effusion rapidly neutralizes the stomach acidity, this will seldom be of help.

Since several of the collected cases have shown in the abdominal extravasation the presence of recognizable medicines, such as castor oil, etc., given erroneously to move the bowels, it may be considered worth while to utilize the fact and to give prior to the operation a certain amount of methylene blue or other innocuous colored solution to aid in the detection of the opening. When found, the perforation should be closed by a double or triple row of interrupted sutures. No attempt should be made, in my judgment, to excise the ulcer before suturing. This takes too much time, and the results in the collected operations show that in 7 out of 9 of the successful cases suturing alone was relied upon. In one only was excision and suturing employed, and in one other case the ulcer was closed over by suturing over it the duodenum, colon and stomach. This experience is confirmed in the large number of gastric perforations that have been treated up to date.

The suggestions given by Pagenstecher for the conduction of this operation are worthy of remembrance. They are that the fundus of the gall-bladder when distended lies in front of the duodenum. By raising up the transverse colon, which rests somewhat in front of and below the horizontal part of the duodenum and by drawing it forward, this portion of the intestine is immediately revealed. Crowding the stomach and pylorus to the left and a little downward with lifting up the liver and pushing the colon down, a good view of the locality of a perforation is obtained.

The closure of the perforated intestine, however, leaves much of the battle for life unfinished. The proper and systematic cleansing of the peritoneum is of the utmost importance. If the extravasation is limited, careful wiping out of the affected portion of the peritoneal cavity with especial attention to the retrogastric and suprahepatic spaces and to the splenic and renal region, with ample gauze drainage will in most cases suffice better than the large warm irrigations of sterilized salt solutions which are, I think, more suitable in extensive or general peritoneal inflammations.

For those who favor multiple incisions and large irrigations the specific directions of Lennander[26] are of value. In suitable cases and in patients of sufficient vitality, he considers that irrigations with water at 104° F., through several incisions, the best method of cleansing the peritoneal cavity. One must go carefully and methodically about the solar plexus and the diaphragm; methodically loosening adhesions, irrigating, and then wiping clean with wrung-out gauze. He begins with the upper surface of the liver, particularly on both sides of the suspensory ligament; then passes between the liver and stomach to the triangular ligament; then around the cardiac portion; then between the stomach and spleen; then under the diaphragm to the left kidney, and along the spleen to the ligamentum phrenocolicum. The division of the triangular ligament with a thermocautery has been suggested, so that one might sweep around the left lobe on both sides. He then cleans between the right kidney and liver, kidney and colon, colon and liver; next the lumbar regions and both iliac fossæ; then both sides of the mesentery of the small intestine, and last the pelvis, which is often infected at the beginning of the trouble. A great quantity of hot fluid is of undoubted benefit in the pelvis. Drains and tampons are intended to remove accumulating fluids as well as to shut off infected areas. Tubes surrounded by gauze are the best drains. He places sterile gauze on both sides of the suspensory ligament of the liver and between the liver and diaphragm. Drains should be placed in both lumbar regions, the left passing alongside of (better through) the phrenocolic ligament external to the spleen to the middle of the diaphragm. The right one passes to the duodenum. The pelvis of men is drained above the symphysis pubis, that of women through the vagina.

My own experience in the surgical treatment of duodenal perforation is confined to one case which is briefly as follows:

Perforation of Duodenal Ulcer; Laparotomy; Suture; Death.—Man, aged thirty years, who had previous symptoms, confusedly detailed, of gastric disturbance but not of hematemesis for several months, was seized 4 days previously with severe epigastric pain, chill, fever, repeated vomiting and great prostration. No blood expectorated or dejected. His abdomen rapidly swelled and became generally tender and painful. On entrance into the New York Hospital, April 30, 1899, nothing could be made out by palpation save that the liver dulness was nearly obliterated. The abdomen was very tympanitic and no special point of tenderness or dulness was observed. He also had a double hernia. On the right side there was a protrusion of intestine beyond external ring. The pulse was 140, and

the temperature 104° F. Diagnosis, a general peritonitis from a gastric or duodenal perforating ulcer was made. A large median incision was made with the umbilicus in center for general exploration. The fingers showed nothing at the rings or at the cecum, and then, on carrying the examination upward, a minute, sharply-defined perforation, one-fourth in. in diameter, was found on the anterior wall of the duodenum near pylorus, out of which was oozing some brandy and water given just before chloroformization. This was sutured with a double row of Lembert sutures and peritoneal cavity systematically and carefully washed out with sterile salt solution. The patient was returned to the ward in bad condition. Salt transfusion, 75 oz., etc., were employed, but the patient succumbed shortly after the operation.

The autopsy showed the perforation to be in the duodenum just below the pyloric termination and in its superior anterior wall. Within the bowel was a deep ulcer at the bottom of which had occurred the perforation.

Later Effects of Duodenal Ulcer and Operation for Same.—There yet remain a few words to be said about the late consequences of a healed duodenal ulcer. The resulting cicatricial contraction may bring about stricture of the duodenum and dilatation of the stomach, and may by traction or primary ulceration damage the bile entrance to the intestine. Several interesting surgical cases have been reported where relief has been afforded by such circumstances. Pagenstecher quotes a case by Lange[26] where a gastroenterostomy was successfully resorted to for contraction of the duodenum, to the hardness and size of the finger, 3 c.m. from the pylorus with dilatation above of the duodenum and stomach.

Codevilla[27] details a more acute case with ulcer and stenosis of the duodenum and dilatation of the stomach. The duodenum was found at the operation markedly stenosed, as in Lange's case, and a gastroenterostomy was performed with a successful and permanently good result.

Carle[28] had a similar case in the front part of the duodenum, but the gastroenterostomy resorted to ended fatally. He also reported another instance where great emaciation and stomach dilatation demanded surgical interference. The first and second parts of the duodenum were found strongly contracted but with atrophic thin walls. Gastroenterostomy was employed with success; death one year later from lung tuberculosis.

Rewidzow[29] also cites a case which is doubtfully placed among these, as the locality of the stenosis following bloody vomiting and gastric disorder for 20 years was shown at the operation to be below the bile papilla where a stenosis existed. For this a gastroenterostomy was successfully resorted to.

BIBLIOGRAPHY.

[1] Thèse de Paris, 1892.
[2] Ulcèr perforans duodeni, Thèse de Paris, 1893.
[3] Schwartz, Ulcère perforante du duodenum, Bullet. et Mem. Soc. de Chirurg., January, 1898.
[4] Thèse de Paris, 1894.
[5] Guys' Hospital Reports, 1894.
[6] Das Ulcers pepticum duodenale, Thesis, 1891.
[7] Beckmann, Ulcer duodenale u. seine Diagnose, 1893.
[8] Deutsch. Arch. klin. Med., 1874.
[9] Diagnostik u. Therapie der Darm Krankheiten, 1899.
[10] System of Surgery, Vol. I, page 733.
[11] Hunter, Brit. Med. Journal, Vol. I, p. 76, 1890.
[12] De l'ulcère perforant du duodenum, Thèse Paris, 1896.
[13] De la perforation de l'ulcère simple du duodenum, Thèse Paris, 1896.
[14] Jacobi's Festschrift.
[15] Die chirurgische Behandlung des duodenal Geschwürs, Deutsch. Ztft. f. Chir., Aug., 1899.
[16] Das peptische duodenal Geschwürs, Deutsche med. Wochenschr., Dec. 20, 1898.
[17] Loc. cit.
[18] Keen, Brit. Med. Journ., June 11, 1898. May 1, Surgery of the Stomach, Lancet, Mch. 19, 1900.
[19] It should also be remembered that generally the duodenum in its first part is free and covered by peritoneum, so that extravasation is likewise possible through a perforation in this region. It is, however, more likely to enter the omental bursa (lesser omental cavity) or invade the retro-peritoneal tissues.
[20] Weir and Foote, Med. News, April 25, 1896.
[21] Mayo, loc. cit.
[22] Codevilla, see Pagenstecher, loc. cit.
[23] Berg and Roux also each report a case in which for a duodenal ulcer with adhesions of pyloric stenosis a similar operation was done with success.
[24] Glasgow Med. Journ., Vol. 51, p. 87, 1897.
[25] Weir, Med. News, Feb. 17, 1900. On an Improved Method of Operating for Acute Suppurating Appendicitis, Med. News, March, 1899.
[26] Pagenstecher, loc. cit.
[27] Loc. cit.
[28] Pagenstecher, loc. cit.
[29] Pagenstecher, loc. cit.

(To be Continued.)

THE PRESENT STATUS OF RECTAL SURGERY.[1]

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PERMIT me to thank you for the honor that you have conferred upon me in electing me to the position of presiding officer over this, your first meeting as an organized body. For over twenty years I have been impressed with the importance of the affections which you are here to discuss, and it is very meet and proper that an association should be formed bearing the name of this one. During the time mentioned I have seen this important branch of surgery wrested from the hands of the quack and pretender and placed where it rightfully belongs—and to-day no book on surgery is complete unless a fair exposition of the merits of proctology is given. Every special work, whether dealing with disease from a medical or surgical standpoint, must contain a chapter devoted to these diseases. The general surgeon, who in the past gave but slight attention to their consideration, recognizes the importance now of giving to them more careful attention, in order to be successful in their treatment. The practitioner of medicine has come to realize that the many diseases which fall under this head are not only often distressingly painful, but may endanger the life of the patient; that many conditions, puzzling in their nature, may exist, which can be accounted for by reflex action from this part of the body. Some men of ability have deemed this class of disease of sufficient importance to make their treatment a specialty, while others combine their consideration with

[1] President's Address.

some other branch of surgery for special consideration. This, I say, is very gratifying to me in that for many years it has been a pleasant duty with me to plead for their recognition by the regular profession.

Up to a decade or two ago the works on general surgery were wonderfully deficient in the way of giving any real information concerning this important class of disease, so it was no wonder that the reader gained nothing in perusing the pages bearing on their treatment. The consequence was that the general profession was almost without literature on the subject save what could be found in a limited number of special works. Therefore, people so affected sought refuge at the hands of men outside the profession, who lured and enticed them by glaring advertisements in the daily press, or by circulars. I am sorry to add that some recent works on surgery give but little information or space to the consideration of these diseases. For instance, one of the most recent books issued on general surgery has this to say in regard to fistula in ano: "The operation for fistula in ano consists in inserting a grooved director into the external opening and pushing it through the sinus until the distal end can be felt in the rectum, then divide with a sharp knife all the tissue above the director." Now, in truth, not one in twenty cases would be cured by following these directions.

In a splendid surgical work just issued appears these words in dealing with the same affection: "Fistula in ano seldom needs operating upon as most all these cases are of tuberculous origin." What a remarkable statement. If taken as a fact, consider how many hundreds of people would go without an attempt to cure them, when they could be easily cured. Not only is the first part of the statement incorrect, but even if it were correct, in the light of modern pathology, these are the patients above all others who should receive prompt attention. Many persons have been prevented from having general tuberculosis by having a tuberculous fistula eradicated. But these cases constitute but a small percentage of this class. The fact that many medical colleges have established a Chair devoted to the teaching of this class of disease and that all post-graduate schools teach them clinically leads us to the hope that all such false doctrine will be corrected. The literature on this special branch, furnished by the members of the Association, will bear good fruit in this line.

Special works too have emanated from your pen and to-day they are used as text-books in the schools. Indeed, the student demands that his instruction in this branch shall equal that given in gynecology, diseases of the eye, ear and throat, genito-urinary, or any other branch.

Shall the treatment of these diseases constitute a specialty? Fifty letters a year is a small estimate of the number of letters that I receive saying that the writers desire to make diseases of the rectum a specialty. I confess that I am at a loss to know how to answer them. In the first place, the writers are very, very busy men, for they usually state that they have but two or three weeks to devote to the matter. Considering the many diseases which make the rectum an abiding place, all having a different pathology, and a number requiring not only careful, but skilful and dangerous surgery, I say that it would be a difficult task to elucidate the whole subject in two or three weeks, granting that I had the ability to do so.

Please permit me to say most emphatically that, in my opinion, no one should think of entering a specialty of any kind in medicine or surgery who has not been in general practice for five or ten years, preferably the latter. Again, the term specialist naturally implies authority, and certainly no one can be an authority on any subject surgical who has not given that subject long and careful study, and has had abundant opportunity to profit by clinical instruction.

The bane of specialism to-day is the "blooming out" of a class of men to practise specialties, who have no practical knowledge of the same. Such action should receive the strongest censure from the entire profession. What right have these men to claim a knowledge above their fellow practitioners? Their practices are on a level with that of the charlatan, and should be so treated. What right has such a man to endanger the lives of innocent but confiding patients—victims would be a better word—by such outrageous conduct. For the protection of women and children, at least, let all such pretenders be ignored.

I take it that the object of this assembling together is mainly to encourage the better understanding of these diseases by the reading of papers and the free discussion of the same. If you will permit me, I would suggest that the membership be made up of those who desire a better knowledge of proctological subjects, whether he be a general or special surgeon, a gynecologist or obstetrician. Indeed, it is by the diffusion of such knowledge in a general way that we are to profit. Considered from a special standpoint it might be well to try to demonstrate that it is just as difficult to excise a rectum as it is to remove an ovary; that it requires as much surgical knowledge to anastomose the colon around a stricture as it does to sew up a lacerated perineum; to do a colopexia as to remove a fibroid tumor; or to do a colostomy properly as to do a trachelorrhaphy.

In regard to the papers read before this society I would suggest that they be in strict conformity to subjects proctologic. The domain of other special societies should not be invaded by your discussions. Let members of other special associations join you, but more for the purpose of hearing these subjects elucidated by men who have given them special study. If you should desire information concerning genito-urinary, gynecological or other special departments you should attend their organizations. They will re-

turn the compliment, I am sure, by listening to you. If they expect to do rectal surgery they will profit by your deliberation; if you expect to combine genito-urinary, gynecological or other work with ours, you will profit by listening to them. A fair and equal exchange, I imagine.

In a word, I take it that this society is not to be composed of men who limit themselves to the practice of rectal diseases only, but to a membership desiring to become better posted in the treatment of this class of disease. Whether a man shall limit his practice, and how, is his own concern, but this body has a far more definite object to attain. Let us do this with a spirit of great friendliness for our neighbor specialists, feeling that it is the relief of suffering humanity that we desire, and not personal aggrandizement.

Taking this as your first real meeting, permit me to congratulate you upon this auspicious beginning. Let your standard be a high one, and in this connection I beg to make the suggestion that you should consider the propriety of annexing this Society as a Section of the American Medical Association. Members of this great body are anxious always to hear papers and discussions on all subjects when in attendance on that body. Surely yours would be a great acquisition to the mother society, and many who attend it are interested in this special branch.

I would warn you concerning application for membership. Your rules should be the more rigid for the reason that many unethical men have in the past been engaged in this special work. Then, too, a specialty oftentimes becomes a "fad" and the temptation to overstep the bounds of decency inviting. I would call your attention to Article I., Section III., in the code of ethics of the American Medical Association, and a rigid adherence to the same should be demanded of all applicants for membership in this body:

"It is derogatory to the dignity of the profession to resort to public advertisement or private cards or hand-bills inviting the attention of individuals affected with particular disease, publicly offering advice and medicine to the poor, gratis, or promising radical cures; or to publish cases or operations in the daily prints, or suffer such publications to be made; to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics and are highly reprehensible in the regular physician."

I see before me men rich in fame and to whom the profession is indebted for valuable research. New instruments, new operations, scientific and original investigations, learned articles, are accredited to you. Let this Association be an inspiration that will keep your zeal aways keen, and your energy undiminished.

After twenty years or more of work along this special line I now see and feel a glad fruition of my hopes, and I am encouraged as I have never been before. I realize too that a few more years will let me "out of the harness," but my consolation is that I will leave the work which has so interested me in abler hands than mine, and that in a humble way I have aided some in the relief of suffering humanity. God speed you, Gentlemen.

MEDICAL PROGRESS.

Bichloride Baths in Variola.—Thirty-six cases of variola, of which one was hemorrhagic and thirteen confluent, were treated by H. A. Ingalls (*Jour. Am. Med. Assoc.*, April 28, 1900) by means of bichloride baths. The baths were given with the idea of lessening the stage of pustulation and the consequent pitting, in the belief that the ordinary pus cocci in the pores of the skin caused the pustulation. The resulting diminution of the pustulation and pitting, of the disagreeable and peculiar odor of the disease, and of the distortion of the features at the beginning of the disease, and the fact that the patient was rendered more comfortable, without any opium, were so encouraging in the first case in which the baths were tried that they were used in all the succeeding cases. The baths were given in the following manner: A bathtub placed at the side of the patient's bed was filled with a solution of bichloride—1 to 10,000—at a temperature of from 103° to 105° F. The patient was then placed in the tub, his head and shoulders being kept above the solution, and the whole body was gently rubbed with a soft cloth. The patient remained in the bath for about ten or twelve minutes, and was then carefully dried, put in clean clothing and placed in a clean bed. These baths were given night and morning. Immediately after the bath the patients felt more comfortable, but in a little while there was a burning sensation "just beneath the skin." For this disagreeable sensation the writer anointed the patients immediately after the bath with a mixture of carbolic acid, bismuth subnitrate and olive oil, which did away with this uncomfortable symptom. The writer thinks that this bichloride-bath treatment is the best yet presented, and cites in detail four of his thirty-six cases. From his observations in these cases he comes to the following conclusions in regard to this treatment: (1) There is practically no mortality. (2) The suppurative fever can be shortened four to six days if the patient is treated from the onset. (3) A minimum of pitting is secured and an almost entire absence of the characteristic, disagreeable odor. (4) The period of desquamation is materially lessened, owing to the thinness of the scab formation. (5) Pain is much reduced, morphine being rarely indicated. (6) The great distortion of features, which gives us such repulsive looking patients, is eliminated to a great extent.

An Early Sign of Tuberculosis.—T. F. Harrington (*Jour. Am. Med. Assoc.*, April 28, 1900) calls attention to the occurrence of a widely dilated state of both pupils as an early sign of tuberculosis. This dilated state is not a paralysis of

the pupils, but rather a condition in which the pupils are in a more or less constant state of dilation, due to some irritation along the track of the nerve-fibers in the ciliospinal region; or perhaps an irritation of the sympathetic, brought about by some blood-change associated with very early tubercular infection not yet fully recognized. The writer has often noticed this condition of the pupils in persons apparently well, and also in others in whom there was no reason for suspecting tuberculosis; and so frequently has tuberculosis followed at a later day in these same persons that he has come to associate widely dilated pupils with incipient tuberculosis. The writer admits that, while he has observed this sign very frequently in cases which afterward developed tuberculosis, it is not infallible, and it may occur in some persons in whom tuberculosis never develops, and again it may never appear in persons who do develop tuberculosis. While the value of this premonitory sign has yet to be confirmed, the writer has become more guarded in giving a prognosis in those cases in which such dilation of the pupils is present.

Diagnosis of Pernicious Anemia.—A. Abrams (*Med. Rec.*, April 28, 1900) reports two cases in which the diagnosis was difficult by clinical signs on account of the prominence of stomach signs. In both cases there was a marked progressive anemia and emaciation with gastric irritability. In one case vomiting was almost a daily occurrence and an examination of the vomitus invariably demonstrated the absence of hydrochloric acid and the presence of lactic acid. In the other, test-meals gave the same results. There was considerable tenderness and resistance in the epigastric region and in one patient a ventricular dilatation was made out. An examination, however, of the blood made the diagnosis of pernicious anemia certain, both normoblasts and megaloblasts being present. The leucocytes were reduced from one-third to one-half the normal number, and the author believes this to be an important sign. He quotes Cabot as saying that "malignant disease may bring down the blood-count to 1,000,000 or lower, but in such cases leucocytosis is always present." Both of these cases were treated with Fowler's solution and bone-marrow, but the latter was discontinued on account of its irritant effect on the stomach. Fowler's solution was increased to twenty minims three times per day and both patients improved markedly. When arsenic cannot be given by the stomach it may be administered subcutaneously or even by the rectum. Iron is useless and liable to create digestive disturbances. Relapses are best prevented by minute attention to dietetic and hygienic details.

Antitoxin in Diphtheria.—J. E. Herman (*N. Y. Med. Jour.*, April 28, 1900) defends one of his recent articles on the uselessness of antitoxin which was severely criticised in the *International Medical Magazine* by Dr. A. Robin. He brings forward further proof to show that the apparent decrease in death-rate since the use of antitoxin is largely due to the fact that the epidemic has recently been of a milder nature and that many more cases are treated for diphtheria than formerly, a goodly proportion of them being, no doubt, non-diphtheritic. He further maintains that the Klebs-Loeffler bacillus has no etiological relation to diphtheria and that it is frequently found in normal throats. He quotes Winters of the Willard Parker Hospital as saying, "Thus far I have no reason to feel that antitoxin is of any service in diphtheria in this hospital."

Hydrochloric Acid and Indicanuria.—A report of the examination of one hundred and sixty-four cases appears in the *New York Medical Journal* (April 28, 1900) by A. A. Jones, who has been led to believe by his investigations that the presence of free hydrochloric acid in the stomach does not bear such a definite relation to the presence of indican in the urine as has been supposed. He examined eighty-five cases showing free acid and no indican, thirty-six cases showing free acid and indican present in the urine, twenty-five cases showing no free acid and no indican, and sixteen cases showing no free acid with indican present in the urine. It now seems settled that indican is a product of putrefaction of albuminous matter, especially in the small intestine, caused by bacterial action, but it is doubtful how much influence the free hydrochloric acid of the stomach has. Wendt, after observing Schlatter's case of complete extirpation of the stomach, concludes that the chemical functions of the human stomach may be completely and satisfactorily performed by the other divisions of the alimentary canal and that the free acid of normal gastric juice has no power to arrest putrefactive changes in the intestinal tract. Its antiseptic and bactericide properties have been overestimated. It would appear that as long as sufficient acid *is* secreted to satisfy the nitrogenous elements, and the total acidity of contents is not much diminished, putrefaction is not liable to arise, despite the fact that free acid is not present. The bile, the pancreatic secretion and the *succus-entericus* all have, no doubt, an antiseptic action and the epithelial lining may possess an inhibiting power. In other words, if the albuminous elements undergo digestion they do not putrefy, and in many cases indicanuria is an index to the adequacy of intestinal digestion without regard to the state of the stomach.

Diagnosis of Hysteria.—According to C. W. Burr (*N. Y. Med. Jour.*, April 28, 1900) the best definition of this condition seems to be that of Möbius, "A state in which ideas control the body and produce morbid changes in its functions." The diagnosis is made by discovering symptoms peculiar to it and by exclusion—by proving the absence of any other condition. The mode of onset and the grouping of symptoms is important. Violent contractions may come on suddenly after a fit or follow some emotional excitement. This never occurs in organic paraplegia.

The grouping is often characteristic, sometimes only one symptom being present, as aphonia, the fit, a palsy or an hysterical joint. A symptom group such as hemiplegia, hemianopsia, and aphasia, which can be explained by locating the lesion in a particular joint, does not occur in hysteria. One may have monoplegia, and geometrical anesthesia, in which nerve boundaries and spinal levels are entirely disregarded, and segments or areas of a peculiar shape are involved. Its boundaries may shift from day to day, and it also differs from organic anesthesia in sometimes being unknown to the patient. An hysteric who is totally unable to tell when she is touched or pricked may be able to write or use the hand in any way when blindfolded. There is no satisfactory explanation of this peculiar condition. The exciting cause is also important. Some emotional or mental shock is almost always the direct agent—a cross, an accident, a disappointment, or worry. The anesthesia may be total, in which case there is insensibility to all forms of stimuli, or it may be partial, the order of the latter being analgesia, thermo-anesthesia, electro-anesthesia, and loss of all sensibility except to heat and to cold. Hyperesthesia over large or small areas is also common. They may appear anywhere, but most frequently over the ovaries, along the spine, on the breasts, just below the ribs, and at the vertex of the skull. One of the most interesting hyperalgesias mimics inflammation of joints, the hip and knee being most prone to be affected. There is never deformity of joint, shortening of bone, or evidence of pus. The diagnosis of the fit may not be easy, for the symptoms are not always clear cut, and may resemble those of epilepsy or the two conditions may be combined. Usually after some mental worry or excitement the body becomes rigid for a few moments, then a violent general chronic convulsion follows, the movements seeming almost willed and conscious. The tongue is rarely bitten, the sphincters are not relaxed. There is no asphyxiation as in epilepsy. Coma is never present but consciousness is always disturbed. In epilepsy defecation or micturition often occurs during the attack. In hysteria large quantities of pale limpid urine are passed after the attack. The paralysis of hysteria can usually be easily differentiated. It may be either spastic or flaccid. Great local wasting never occurs, and the reaction of degeneration is always absent. True palsy of the bladder never occurs, but there may be retention and obstinate constipation. The knee-jerk is usually exaggerated. One type of flaccid palsy peculiar to hysteria is that the patient may be able to keep the completely paralyzed part in any position in which it is passively put.

Cancer of Stomach in the Young.—Cancer appearing in cases under twenty years of age are clinical and pathological curiosities, but those which occur between twenty and thirty, although not at all common and may be considered as present in the young, yet they form a rather constant percentage, ranging from two to four per cent. W. Osler and F. McCrae (*N. Y. Med. Jour.*, April 21, 1900) have reviewed the cases which have been reported under twenty years of age, there being six below ten years and only thirteen cases between ten and twenty years of age. In a series of 150 consecutive cases of carcinoma of the stomach occurring in Johns Hopkins Hospital, six of the patients were under thirty years of age and these are reported in detail. Two features stand out prominently, a striking abruptness of onset, and the acuteness of the course. All cases were in males. Loss of appetite was not present in three of the six. Only one was free from pain and vomiting was present in five of the cases as was also a definite tumor. Mathien, in his series of nineteen, estimates a mean duration of three months. In the reported series of six the duration was known in four, two being six months and two being four months. One other was probably equally rapid, while the sixth gave a history of eighteen months.

The Riding Fragment.—C. H. Golding-Bird (*Brit. Med. Jour.*, April 21, 1900) says that in fracture of the leg with riding fragment, the obstacle to reduction is not so much blood-clot, soft tissues, etc., between the tibial fragments, as it is the spring action of the fibular fragments which are driven into the surrounding fibrous tissues. Attempts to reduce the tibial deformity increase the spring of the fibular, this being more especially true in cases of spiral tibial fracture. When proper manipulation fails to keep such a fracture in good position, when the fracture threatens to become compound, when there is shortening, operation should be performed not only on the tibial fracture but also on the fibula to prevent its spring action, and the fragments fixed according to the preference of the surgeon.

Bottini's Operation.—W. Meyer (*Med Record*, April 28, 1900) says that Bottini's operation for the cure of hypertrophied prostate has come to stay. What remains to be done is to find its proper place among radical procedures and to determine its proper indications. The operation is performed under local anesthesia. Three cuts are made, a median, which is the most important, and a lateral one on each side. These cuts are made slowly with a white-hot blade. Preliminary cystoscopy is of very great assistance but must be dispensed with in old prostatics with chronic sepsis. The advantages of Bottini's operation are restoration of vesical drainage, disappearance of vesical spasms, improvement in general condition, cure of the generally present constipation; it shows the greatest percentage of cures with the lowest mortality. This operation should be done as soon as it becomes necessary to put the catheter into the hands of the patient himself, since the danger to life begins at this time. The presence of pyelitis is not an absolute contraindication to the operation, although it adds to its gravity.

THE MEDICAL NEWS.

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SATURDAY, MAY 5, 1900.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THE Fifth Triennial Session of the Congress of American Physicians and Surgeons, held on Tuesday, Wednesday and Thursday of this week, was most successful. The attendance surpassed that of any previous meeting. Of the scientific importance of the session our readers may judge from the very full accounts of the sessions of the first two days which appear in our present issue.

This triennial assemblage of the representative specialists of the country has become an important event in the medical world, and the last session for the Nineteenth Century marks the culmination of professional interest and the acme of dignified scientific influence.

The discussion on "Bacteriology in Health and Disease," at the first general session, drew out a representative audience. Unfortunately as specialism has become more and more emphasized the possibility of mutual influence has minimized. Special headquarters, special sessions, special dinners, have become the order of the day. Under these circumstances the idea of a number of short papers from leading men in their own lines at the general session, each on some living issue, is eminently a good one. When it is carried out, as on this occasion, by the selection of prominent authorities on what may be called the theoretic subjects, each on a theme that touches practical present-day medicine at an important point, a long step in the right direction, that of reversion to mutual influence, has certainly been taken. The interest of the second day's general session threatened to be marred by the unavoidable absence of Professor Osler. Dr. Weir Mitchell's poem, however, proved amply able to supply any and all deficiencies in the day's program. Those who had the pleasure of listening to its rendition by the doctor-poet himself will ever bear the memory of a rare privilege accorded in the midst of busy days, all the more memorable for the enthusiasm it aroused for a glorious, world-old profession.

Among the papers that attracted most attention were Dr. Trudeau's on "Sanitaria for the Tuberculosis," which we shall have the privilege of presenting to our readers in full; Dr. Thayer's on the "Etiology of Malaria;" Dr. Flexner's on the "Bacteriology of Dysentery," presenting the conclusions of his researches in the Philippines, and Dr. Clarence Blake's on the "Sociological Status of the Physician," a masterly essay on a most fruitful and interesting theme. Among the discussions of special interest was that on pernicious anemia before the Association of American Physicians. There seems no doubt that this disease is much more frequent in this country than is usually thought. Cases of the disease masquerade to death under the name of general tuberculosis, or sometimes as a typical persistent typhoid fever, or even as jaundice and hypertrophic biliary cirrhosis. The assurance of its greater frequency is accompanied by greater skepticism than ever in the therapeutics of the disease.

On the whole, this meeting of the Congress has been well worthy the closing year of an especially glorious medical century.

THE UNITED STATES PHARMACOPŒIA.

ALMOST one hundred years ago the first steps were taken for the preparation of a general Pharmacopœia and in 1808, through the labors of Dr. Lyman Spalding, of New York, there was issued the first National standard. For one hundred years the Committee of Revision of the United States Pharmacopœia have worked stead-

ily and well and the recent meeting of the Convention, beginning May 2d, was one of unusual promise. The meeting was very large, the different bodies entitled to participate were well represented.

The high level of scientific work of this body during the past was ably set forth in the excellent address of the President, Dr. H. C. Wood, and the outlines of the mold in which the Pharmacopœia of the future should be cast were sketched in broad and telling phrases. Speaking of the relationship of this book to the medical body, it was said that there was a widespread feeling that the medical profession does not properly appreciate and support the U. S. Pharmacopœia. This feeling Dr. Wood believed had some foundation, but it certainly is exaggerated. "It is true that—owing to the activity of manufacturing pharmacists and the number and skill of their commercial salesmen, aided by the deficiencies of medical education and the peculiar child-like credulity which is so common in doctors—all kinds of proprietary mixtures and proprietary articles, and extra-pharmacopœial remedies are largely used in the United States. It is so easy for the lazy doctor to write for Smith's Panacea for Human Ills, and so easy for the doctor who knows neither Materia Medica nor Therapeutics to order Jones' Consumption Cure, or Thomas' Kamiantia, that so long as laziness and incompetence remain with us, so long will this thing be done. But this is no fault of the Pharmacopœia, and no perfection of the Pharmacopœia will greatly influence it."

We should feel proud of the Committee of Revision, which, under the masterly guidance of Dr. Charles Rice of New York, has given the profession such a guide, but, as pointed out in the address already quoted, there certainly seems to be a misconception as to the office and function of this book. It is not a guide to Practice, it would then have to be a Materia Medica or a book on Therapeutics. It is the apothecaries' *vade mecum*, and as such is intended primarily for them.

It is certainly the work of the trained pharmacist to give to the healer of bodily ills the best formulæ, the best simples and accurately prepared drugs. The Pharmacopœia should tell him how to make them and in that the physician has but a collateral interest, although it should be a real one; while the student of therapeutics takes that which he knows to be standard and applies such in the treatment of disease.

We shall present to our readers the able address of Dr. Wood in a shortly forthcoming issue of the MEDICAL NEWS.

SUNLIGHT AND HOME HYGIENE.

ALTHOUGH for centuries it had been more than suspected that sunlight was Nature's great disinfectant, it is only within recent years that bacteriologic investigations have shown that white light is a most powerful inhibitory agent for the growth of all forms of microscopic life. Somehow the actinic rays of white light, the same that cause the changes in the silver salts in photography, are able to initiate alterations in the chemical constituents of microbes that eventually lead to their complete destruction. Unfortunately, Nature's pervasive germicide is not allowed to penetrate into the living-room of city folk in sufficient amounts to permit the full exercise of these beneficial powers. This is true not alone in the houses of the poor, for even from the dwellings of the better class sunlight is excluded as zealously almost as if it were an instrument of harm.

The dim cathedral light that seems to many housewives the great desideratum for living-rooms is a serious preventer of important natural, hygienic processes—processes that deserve to be encouraged not obstructed. Curtains that keep out the sunlight lest it should fade the carpets or the wall-paper, or show too clearly that the housewife herself is not longer in the bloom of youth, do much more than merely darken the room. They make it a favorable living and breeding place for any bacteria that may be introduced. Hallways into which so many bacteria are brought direct from the dusty streets, instead of being the most lightsome parts of the house, are usually the darkest. Double doors and stained glass effectually preclude active sunlight.

This is not as it should be. The matter is so important that family physicians should throw the weight of their influence in favor of the greatest possible amount of sunlight in the home. For delicate children it means frequently the difference between a life free from illness and one in which delicacy of constitution becomes inveterate from recurring ailments. The improvement in health among the poor of our large cities as the result of letting in the light into the tenements shows how much good the great solar scavenger can accomplish even under unfavorable circumstances. A time will come, doubtless, when the family physician will form one of

the family council as to hygienic arrangements of the home. Meantime, the lesson must be insisted on that sunlight cannot with impunity be denied fee entrance to the house. The orange and red stained-glass windows may give elusively brilliant color effects on hangings, rugs, and furnishings, but they disarm sunlight for its conflict with disease. They shut out the precious rays at the blue end of the spectrum, odorless, noiseless, but efficient scavengers, that do Nature's work and so make life possible for the higher organisms in spite of the multitudinous germs that exist and multiply so rapidly all around them.

ECHOES AND NEWS.

The Barren Island Plant.—Governor Roosevelt has signed the bill compelling the removal of the garbage works from Barren Island, N. Y., and the abatement of the nuisance.

Contagious Diseases.—There were reported in New York during the week ending April 28, 1900: Measles, 714 cases and 27 deaths; diphtheria, 224 cases and 43 deaths; laryngeal diphtheria (croup), 10 cases and 4 deaths; scarlet fever, 165 cases and 13 deaths; smallpox, 2 cases; tuberculosis, 202 cases and 204 deaths; typhoid fever, 10 cases and 8 deaths; cerebrospinal meningitis, 3 deaths; totals, 1327 cases and 302 deaths.

The Jacobi Dinner.—The post-prandial program of the Jacobi dinner has been arranged as follows: (1) Opening address by the presiding officer, J. D. Bryant, M.D. (2) Dr. Jacobi—the Physician, by W. H. Thomson, M.D. (3) Dr. Jacobi—the Scientist, by William Osler, M.D. (4) Dr. Jacobi in Relation to Medical Education, by Hon. Seth Low. (5) (Title to be announced.) Hon. Carl Schurz. (6) Presentation of the Festschrift, by A. G. Gerster, M.D.

The Tuberculosis Congress.—The International Tuberculosis Congress was opened at the San Carlo Theater, Naples, Italy, April 25th, in the presence of the King and Queen of Italy and the Minister of Public Instruction, Dr. Baccelli. The latter delivered the inauguration speech. United States Embassador Draper was in attendance.

Morphine Prices Lower.—The price of morphine was reduced ten cents an ounce on April 23rd. This makes the third reduction during April and lowers the price from $1.90 to $1.80. The reason for this latest decline is probably the keen competition between the old and new manufacturers.

Women at Columbia Laboratories.—At a recent meeting of the Faculty of Pure Science at Columbia University it was decided to allow women who had a baccalaureate degree in a recognized college, and were candidates for higher degrees at Columbia, to use the laboratories and other facilities of working in astronomy, botany, geology and physics. This places women pursuing graduates' courses on precisely the same terms as men.

Number of Blind Increasing.—There are 705 applications for a share in the $30,000 which is to be distributed to New York City's blind this year, and as each beneficiary is to receive $50, it is feared the money may not go around, even after the investigators have thrown out the non-resident and fraudulent applications.

Radical Changes in State Hospitals.—Four physicians who have long been identified with the care of the State's insane patients in Greater New York are summarily legislated out of office by the Burnett bill, which has now become a law, having been signed by the Governor. These men are Dr. A. E. Macdonald, General Superintendent of the State Hospital at Ward's Island; Dr. Oliver M. Dewing, General Superintendent of the State institution at King's Park; Dr. Elliot, Medical Superintendent of the old hospital at Flatbush, and Dr. Herman C. Evarts, Medical Superintendent at King's Park. It is understood at the office of the State Commission in Lunacy that for the present, however, until other arrangements can be made, the present superintendents will be permitted to retain their positions, as it is desired that the change shall in no way impair, even temporarily, the efficiency of the institutions concerned.

Philadelphia Health Report.—Returns of deaths for the week ending April 28th, show a large decrease. The total number was 618, a decrease of 121 from those of last week and an increase of 117 over the corresponding week of last year. Contagious diseases: Diphtheria, 70 cases, 21 deaths; scarlet fever, 68 cases, 6 deaths; typhoid fever, 74 cases, 18 deaths.

Maurice Porter Institution for Children.—By the increase of the staff of this Chicago institution, the facilities for the training of nurses will be improved. A two-years course of training will be given. Children are admitted only between the ages of two and twelve. This hospital was incorporated in 1894. The staff now comprises the following well-known physicians and surgeons: Drs. N. Senn, Frank Billings, Truman W. Miller, Norman Kerr, M. L. Harris, J. W. Oswald, W. S. Christopher, W. W. Quinlan, W. D. Stores, J. B. Houston, Samuel J. Walker, George F. Fiske, A. M. Hall, R. R. Campbell, M. Herzog, Hugh T. Patrick, and George Chapman.

Exhibit of Public Baths.—An exhibit of the free public cleansing baths of America will be made at the Paris exposition, under the auspices of Dr. Simon Baruch of New York. For the introduction of the public rain-bath into this country the people are indebted to Dr. Baruch; indeed, he is the originator of the plan and has

succeeded in having them introduced in several cities of the United States. Chicago has three, Buffalo one, and New York one in process of construction. These are the only baths of this kind in the world.

Smallpox in Chicago.—It should be noted that every case of smallpox in Chicago during the last fifteen months, both the imported cases and those contracted by residents from the imported cases, has without exception been unvaccinated. There has been no case among the vaccinated. The verdict of the medical profession at the end of a century of vaccination is that, with the exception of a very small number of insusceptible individuals, every unvaccinated person would contract smallpox in the course of a natural lifetime, if exposed to the contagion, and fully one-half of those attacked would die, while of the survivors a large number would be hideously disfigured, maimed and disabled. On the other hand, if efficiently vaccinated and revaccinated, an equally infinitesimal number of hypersusceptible individuals would contract the disease on exposure, and of this small number less than one in a hundred would die. One-tenth of the human race, on the average, died annually of this disease for centuries before the discovery of vaccination, during which period, in the forcible language of Lord Macaulay, "The disease was always present, filling the churchyards with corpses, leaving on those whose lives it spared the hideous traces of its power, turning the babe into a changeling at which the mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to her lover."

Sanitation in Chicago.—Health Commissioner Reynolds recently addressed the Chicago Academy of Sciences at its meeting on some problems of sanitation in Chicago, and among other things he said that the sanitary problems of this city differ from those of most cities with regard to the drainage and water supply, and the fact that the loose, friable soil, on which the city is built, naturally produces dust or mud, according to the weather. The immense quantities of bituminous coal that are consumed continually adds to the impurities of the surface and the atmosphere. The solution of the drainage and water problems will be accomplished when the sanitary waterway and its auxiliary, the intercepting sewer, are completed. As sunlight is the great life-giving principle for man and the chief enemy of diseases of germ origin, greater care in the future will be taken in the construction of residences, shops and offices, so that an abundance of light will have free access to every part of the building. There is much hope for a better sanitary condition in the fact that the people are becoming better educated in the nature and prevention of disease. If the present percentage of increase in the duration of life in Chicago is kept up, the city soon will become famous as a great health resort. The bulletin of the Department of Health for April, 1899, shows that during a generation the duration of life in this city has more than doubled. Thirty years ago the average age for deaths in Chicago was 13.9 years. At the present time it is 29.4 years. With an average annual death-rate of 14.4 per thousand during the years 1894-98, compared with an average annual rate of 40.6 per thousand from 1845 to 1854, a saving of 42,050 lives per annum can be demonstrated.

Medical Missionary Work.—Medical and educational work and their connection with missions were the topics discussed at the meeting in New York on April 30th of the delegates for the Ecumenical Conference on Foreign Missions. Many of the missionaries assembled were physicians as well as teachers, and in their addresses it was made clear that a missionary, to be successful in a foreign field, must devote almost as much time to the physical as to the spiritual welfare of the people among whom he goes. As a rule, the missionaries have to content themselves with a very limited stock of medicines and few instruments, but every missionary, it seems, should have some medical and surgical training and must always be ready to undertake the cure of any disease brought to his attention.

Confidences of Physicians.—The New Haven Medical Society is aroused against a recent ruling in a case before the Superior Court in New Haven and has taken preliminary steps looking to the repeal of the law that enables a judge to compel a physician to testify to what the physician regards as privileged communications between himself and his patient. As the Connecticut law now stands, such communications are not deemed privileged and must be divulged in court as testimony. The New Haven Medical Society considers that the rule of common law should be overruled by the enactment of a statute similar to that in New York and seventen other States.

Vote against Women Nurses in Army Hospitals.—On April 24th the Senate Committee on Military Affairs, by a vote of 6 to 5, ordered an adverse report on the bill providing for the employment of women nurses in military hospitals of the Army.

Only Men Nurses for the "Maine."—It was decided in London on April 26th that the hospital ship "Maine" shall return to South Africa. Hereafter she will carry no women nurses, all the nursing being done by men trained in the American Ambulance School.

Pathology in the University of California.—Mrs. Phœbe A. Hearst has presented to the University of California a complete equipment for the department of pathology, which will make this department equal to, if not greater than, that of any university in America.

Aphasia Patient at Harlem Hospital.—Gero Martino, an Italian, was shot in the head on April 10th, and taken in an unconscious condi-

tion to Harlem Hospital. A portion of brain tissue was removed. It was thought that he would die; nevertheless he is now convalescent. Martino has lost the use of his tongue and cannot remember things. He will probably never regain these faculties.

Smallpox in Winnipeg.—A very malignant type of smallpox is epidemic in Winnipeg, Manitoba. Eighteen cases were reported on April 27th, many of whom were not expected to survive. Health Officer Inglis believes that Winnipeg is threatened with the worst epidemic in Canada since that of Montreal in 1885.

Tuberculosis Congress Adjourns.—The International Tuberculosis Congress at Naples concluded its sittings on April 28th. An international committee will be organized by Dr. Lannelongue of France, the Duke of Ratibor of Germany and Professor Bacelli of Italy. These gentlemen will appoint an equal number of members to represent each of the the three countries.

SOCIETY PROCEEDINGS.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Fifth Triennial Session, Held at Washington, D. C., May 1, 2, and 3, 1900.

[Specially reported for the Medical News.]

GENERAL SESSION.

FIRST DAY—MAY 1ST.

Adaptation of Pathogenic Bacteria to Different Species of Animals.—Dr. Theobold Smith of Boston pointed out that medical science and medical art have to do chiefly with the phenomena of human disease. That which medical science wants to know is the series of causes or antecedents leading to any given disease and the series of phenomena which unfolds itself within the body during disease. Medical art desires to know where human ingenuity may come to modify, suppress, or eliminate portions of this series, so as to interfere with the progress of the disease and bring it to a standstill. Hygiene, by common consent, devotes itself to the external phenomena; pathology, to the internal. A small proportion of the infectious diseases of man and a large proportion of the infectious diseases of higher animals are transmissible, or at least, inoculable upon smaller animals producing in them diseases which have more or less constant characters. The range of infectiousness varies considerably and arbitrarily without any at present assignable reasons. The range of infective power seems to a certain extent to coincide with the readiness with which the bacteria can be artificially cultivated on various substrata. Or, in other words, with their degree of saprophytism. Thus, the plague bacillus, the colon derivatives, the rabbit septicemia group, and anthrax, are quite readily cultivated and their range is very wide. Investigation of infectious diseases of animal life has brought before us another phenomenon which is of considerable importance. Certain bacteria causing disease among different species have certain affinities which cause us to classify them together and which enable us, at the same time, to clearly separate them from other pathogenic groups. One of the most important of these groups consists of derivatives of the colon bacillus which produce epizootics among swine, guinea-pigs, field-mice and spermophiles which have been found associated with disease in horses, cattle and certain birds.

Outbreaks of meat-poisoning in European countries characterized by gastro-intestinal disturbance are most likely due to some forms of the paracolon bacilli and paratyphoid bacilli. The typhoid bacillus is probably a more highly modified offshoot of this same stock. There is much minor variation among these derivatives, which is probably due to an adaptation to different animal hosts. We might say that the colon bacillus or some ancestral form possessed certain qualities favorable to parasitism which have enabled it to become a prominent pathogenic power under the form of a number of varieties. The tubercle bacillus furnishes us still another illustration. The avian type has been recognized as a variety for some years. Similarly, the tubercle bacillus of cattle has certain uniform characters which have thus far been found from culture in the human subject. There is one other question which is more or less associated with the subject, the fluctuation of the virulence of pathogenic organisms and the bearing of this upon the appearance of infectious diseases in epidemic form. The commonly accepted view of the gradual self-limitation of epidemic diseases is the exhaustion of susceptible material. The recrudescence is similarly ascribed to the reappearance of a young, susceptible generation. Thus, the reappearance of the Eastern plague after an interim of months is ascribed by one observer to the new generation of rats. If we indulge in a little speculation along teleological lines we shall see that the attenuation of virus limited to one host is not an unreasonable hypothesis. We may assume that all parasitism tends toward a more or less harmless symbiosis.

The author said that he believed the great specific energy of many disease germs was acquired in early geologic ages, possibly in animals of a very different type from those now living. But it is not improbable that the process of making bacteria is going on now in the animal world, if we notice only that these bacteria have been transported by some accident from their unseen habitat to species which happen to be susceptible.

A Study of the Mechanism of Agglutination.—Professor Harold C. Ernst of Boston held that in the early observations on the agglutinating properties of the serum of immune animals the facts in the cases were developed with motile bacteria

as with Charrin and Rogers' (1899) studies with bacillus pyocyaneus in cultures in the serum of immune animals and Pfeiffer's reaction in cholera, typhoid, etc., and it is notably the case now that the most definite reactions are obtained usually with motile bacteria. After reviewing the contributions to medical literature Dr. Ernst said that the relation between the agglutinating property and the bactericidal property is equally indefinite from the point of view of immunity. The rat, with an extremely bactericidal serum does not agglutinate at all. In the dog, also with a bactericidal serum, agglutination occurs very remarkably. Nor are the origin or chemical properties the same. The studies already made seem to show that the agglutinating property does not lie in, and is in no way connected with, the flagella of the bacteria concerned; that agglutination is not to be accepted as a specific property connected with a condition of immunity, although this is a difficult idea to give up; that a homologous nature of agglutination cannot be considered a positive characteristic, for how, then, explain the clumping of typhoid bacilli by diphtheria antitoxin. Finally, that no universally applicable explanation of agglutination has yet been offered.

Relation of Bacteriology to Clinical Medicine.—Dr. Richard C. Cabot of Boston was of the opinion that bacteriology is in closest relation with clinical medicine by the help it gives in clinical diagnosis. Such assistance is given through the demonstration of the bacilli themselves in secretions or in the products of disease; through the agglutination tests; through the injects of soluble products of the growth of certain bacilli (tuberculin, mallein). Thus far only two, or possibly three, such bacteriological tests can be said to be in general use throughout this country, *i.e.*, the search for the tubercle bacillus in sputa; the search for diphtheria in the throat, and possibly the agglutination test for typhoid. Other such aids to diagnosis which seem likely to come into more general use are the examination of the blood, the sputa, the urine, the feces, the cerebrospinal fluid, the urethral, the vaginal, the uterine secretions, the nasal, pharyngeal and conjunctival secretions. Next to typhoid, Malta fever seems at present the disease in the diagnosis of which we are most helped by the agglutination tests. To other diseases, the diagnostic assistance of the agglutination reaction has not been extended. Individual observers have reported success in the attempt to apply the serum tests to diagnosis of tuberculosis and croupous pneumonia, but the results have not been extensively confirmed. To a limited extent we are able to reverse the use of the agglutination test; instead of using the well identified bacillus to test the body-fluid of a doubtful case, we can use the body-fluids of a well identified case to test a doubtful bacillus. Of the diagnostic use of tuberculin it is only necessary to say that despite the warnings of Virchow, it has passed into general use and deserves to be utilized much more widely still. The few who object to its use are for the most part those who have not tried it. The use of mallein is well established. Statements regarding prognosis are apt to present an unrivalled material for the study of the art of hedging. Bacteriology is helping us to make our prognoses less meaningless. The clinicians realize how difficult it is to interpret the results of bacteriological examinations. For example, to draw the properly limited inference from the announcement of a positive Widal reaction, to be enough and not too much alarmed by a positive tuberculin reaction, or by the finding of Klebs-Loeffler bacilli in a patient's throat. Especially is this true where relatively indefinite quantitative expressions enter into the bacteriologist's report. Only he who makes the test can really appreciate what is meant in a given case by such phrases as "Very numerous tubercle bacilli, very virulent streptococci, very motile organisms, very numerous malarial organisms, etc."

The municipal laboratory of the city of Boston now offers to examine for physicians material suspected as coming from any of the following diseases: Typhoid, tetanus, tuberculosis, rabies, diphtheria, malaria, glanders, influenza, pyogenic organisms, gonorrhea.

Bacterio-Therapeutics with Especial Reference to Tuberculosis.—Dr. E. R. Baldwin of Saranac read a paper with this title. The author dealt with the various uses of bacteria and serums in the prevention and treatment of diseases with a more detailed account of those in tuberculosis. Living bacteria are little used except in vaccination for variola and anthrax. Dead cholera, plague, and typhoid bacilli are useful in prevention, but irrational in treatment. Diphtheria and tetanus are as yet the only conspicuously antitoxic serums of practical value. Streptococcus, pneumococcus, cholera, typhoid, plague and recurrent fever serums are either bactericidal or bacteriologic and of greater value in immunization than treatment. There are many extracts of tubercle bacilli under the general name of tuberculin, which the author enumerated and described. No permanent immunity is produced by any of them, although the new tuberculins have some immunizing power in animals. The method is not applicable to man, nor safe, because likely to produce chronic poisoning, even in healthy subjects. Research at present aims to discover and utilize the mechanism of relative immunity produced by injections of bacillus substance. The nature of the tuberculin reaction is of importance. Of the various theories promulgated, that which assumes a ferment action, chiefly produced by secretions from leucocytes, is most in line with present knowledge. Many bacterial extracts, nucleins and digestive albumoses excite the same reaction as tuberculin produces. Tuberculin used therapeutically has only a limited application, and as it does not immunize for any length of time, it may not be better than other substances that can produce local hyperemia. The production of local hyperemia is rational in lupus, tuberculous peritonitis and, to a limited extent, in pulmonary tubercu-

losis. Serums are not yet successful as to antitoxic properties. They may be bacteriologic or bactericidal. There is still hope for some efficient serum or extract of tissues, although possibly it may not be antitoxic.

Etiology of Malarial Fever.—Prof. William S. Thayer of Baltimore read this paper. He was of the opinion that the disease was acquired through the gastro-intestinal tract, especially by drinking water; through inhaled air; and by the bite of insects. The experiments of Celli, Marino, Zeri, Grassi and Filetti were strong evidence against the idea that the disease might be acquired through the gastro-intestinal tract; while a careful study of the literature as well set forth by Norton revealed the utter lack of evidence in support of such an idea. With regard to the theory that the disease was acquired by inhaled air, it could only be said that while such general facts spoke in its favor, no positive evidence in its support had ever been adduced. That the disease might be acquired through the bites of insects, especially of mosquitoes, had become an attractive hypothesis. It then may be considered as proven, that the malarial parasite possesses an extra-corporeal cycle, which is completed in the stomach wall of mosquitoes of the genus Anopheles, and that members of the genus Anopheles are capable of transmitting malarial from infected to non-infected individuals. The author then went over the bites of insects indigenous to certain localities in relation to the pathological effects, and especially referred to the class of mosquitoes which infect the suburbs of Baltimore.

Bacteriology of Dysentery.—This paper was read by Prof. Simon Flexner of Philadelphia. He said in part: There are few subjects in medicine that have attracted more attention than dysentery. Its history dates from the earliest written records and its ravages, unlike those of many of the pestilential diseases, have continued perfectly unabated to the present day. The most ancient writing upon medicine—the Papyrus Ebers—contains allusions to dysentery; the oldest Indian medical writers refer to it under the name atisar, while Herodotus speaks of its prevalence in Thessaly. Hippocrates, however, was the first to regard dysentery as an independent disease. I should hesitate to bring before this audience a subject so time-worn were it not for the fact that the nature and more especially the etiology of dysentery are among the problems which still await a satisfactory solution.

The imperfection of our knowledge of the nature of dysentery is not due to lack of opportunity for or of energy in its study. The literature contains some of the most distinguished names among clinicians and investigators, thanks to whose efforts its clinical history, its epidemiology and, to a less extent, its pathological anatomy have received partial elucidation. Nor has the disease in the past quarter of a century escaped the attention of the bacteriologists, although it must be confessed that the results of somewhat extensive studies along these lines have been far less conclusive than might have been predicted. Given a disease that is never entirely absent from temperate and tropical regions, that appears with epidemic severity, that permits of easy access to the *materies-morbi*, one would certainly have been tempted to predict that the success achieved in so many other and apparently no less difficult fields, would probably be repeated. That the attempt to establish a common etiological factor for all cases of dysentery has thus far failed, this audience need not be reminded. That this failure to emphasize the existence of several pathological states for which the term dysentery is employed merely as the collective designation need not be defended here. But that these conclusions regarding the disease may after all not be in keeping with the facts is at least open to suspicion. When we recall the protean nature of other infectious diseases, among the most common of which are tuberculosis and typhoid fever, there can be no *a priori* objection to the hypothesis that the causative agency of dysentery need not necessarily vary for each of the many types of the disease that have, from time to time, been distinguished. For the purpose of my inquiry I shall consider briefly the clinical and pathological types. That the lines of demarcation between the several clinical and pathological types should be inaccurate is not a matter of wonder. Both the beginning and the end of any given instance may vary very widely and the symptoms and lesions of cases arising sporadically in temperate climates may agree with those of dysentery occurring endemically in the tropics or epidemically in both localities. The terms "catarrhal," "tropical," "epidemic" and "diphtheritic" are far from signifying sharp-cut entities. The clinical manifestations and pathological lesions of the catarrhal variety occur in all kinds of dysentery and in all places where the disease prevails. Ever since the time of John Hunter there have been those who, upon pathological-anatomical grounds, have separated the endemic from the epidemic disease, and the line has been even more sharply drawn during the past decade, since the discovery of the ameba coli in its relations to tropical dysentery. But the distinction between tropical dysentery, which is characterized by ulceration and thickening of the intestines—especially the colon, the lesions beginning in the submucous coat of the gut—from the epidemic disease in which a false membrane exists, usually associated with ulceration without any primary involvement of the submucosa, is far from sharp and constant. In this country diphtheria has not been commonly observed in the ulcerative and amebic form of dysentery, while in Egypt, the two pathological conditions are not infrequently found together.

SECOND DAY—MAY 2D.

The first order of business was the voting on the resolution, which was unanimously carried, reading as follows: For the appointment of a

committee of three, with full power to draw up and execute on behalf of the Congress of American Physicians and Surgeons, a memorial and petition to the Congress of the United States, asking that charitable, religious and educational institutions be relieved from such provisions of the War Revenue Act of 1898 as impose taxes on legacies left to such institutions, and to take such other action as may, in their discretion, seem desirable in securing such relief.

The following resolution by Dr. W. W. Keen, of Philadelphia, was unanimously carried:

Whereas, the medical profession employs various kinds of exact measuring apparatus, particularly clinical thermometers, ureometers, lactometers, and volumetric apparatus; and

Whereas, the physician should be able to obtain a written official guarantee of the accuracy of such apparatus; and

Whereas, no bureau has been established by our government for this purpose, necessitating the importation of such apparatus from countries possessing standardizing bureaus; therefore be it

Resolved, that the Congress of American Physicians and Surgeons heartily endorse the movement now on foot establishing such a standardizing bureau where such work and other equally important work may be undertaken.

Resolved, further, that a copy of these resolutions be forwarded to the Secretary of the Treasury, to the President of the Senate, to the Speaker of the House of Representatives, and to the Chairman of the House Committee on Coinage, Weights and Measures.

Sociological Status of the Physician.—Dr. Clarence J. Blake of Boston read this paper. The author said that the range of sociology, in its modern form, may be said to extend from investigation of the power value of psychic phenomena in the unit to consideration of physical economics in the mass. The original ideas of society as the product of extrinsic causes or of society as a force aggregation upon a materialistic basis, have gradually given place to a recognition of the continuity of the ethical idea in an aggregation of human units the majority of whom are relieved, in whole or in part, from the demands incident to a primitive struggle for existence. It is precisely at this point in the development of sociology that a member of the body politic, who has long existed and who has indeed for several centuries had a definite sociological status, becomes an increasingly coöperative factor.

The science of society which has come in the growth of its responsibility to the human mass to find the need of a more accurate study of the entity of the human unit turns to the doctor of medicine for advice and counsel. To the members of the medical profession, whose devotion primarily to the needs of the unit, leads them to concentrate their energies upon a succession of individuals and who consequently find themselves isolated more or less from the social community and placed apart as specialized workers, the newer and broader sociology brings not only the stimulus of association and sympathy but larger opportunities for the exercise of their usefulness. As a natural result of this approximation, appreciation grows, barriers of prejudice are broken down, the conventionalities of self in which pessimism is nourished disappear and men of different walks of life come to understand each other better, in the light of a common purpose to helpful ends. The sociological status of the physician, therefore, at the present time, may be said to be his standing in regard to an extensive movement in behalf of the study of human relationships with a view to a truer comprehension of their normal basis and to their betterment.

Before proceeding to a consideration of the effectiveness of the doctor of medicine as a part of the social organization exhibited through the medium of the institutions with which he is particularly related and of the other duties of which he is capable and which lie before him, it will be well to consider briefly the character of his professional training and its reactionary effect upon himself as a man and citizen. Of all special educations that of the science and practice of medicine, when it is of the best quality, is the most exacting and makes the largest demand upon the staying power of the student; it is longer in duration, more confining, but requires more intense application than the corresponding courses which lead to a degree either in law or divinity and affords a larger suggestive opportunity for collateral scientific reading. It implies in its beginning, the combating of natural repugnancies and, in its continuance, a ceaseless struggle against the mentally depressing influence of daily contact with disease and dissolution, it challenges lofty sentiments and lays bare the framework of cherished emotions; on the other hand, it demonstrates truth and gives the foundation for a faith which, although usually silent and often circumscribed, nourishes the optimism necessary to this vocation and helps the doctor to regard the affairs of life in the light of their importance, not to himself, but to the individual whom for the time being they most concern.

That the "outward profession of a faith" is not usual in the medical profession is not due to the lack of this quality, but rather to the reluctance to make public expression on the part of men whose life is, in its practical exhibition, largely confidential and who, moreover, have especial opportunity to give utterance to the spirit within them in human contract work. To the claim that medical education furnishes the material for a deep and lasting faith in a creating and sustaining power may be added the claim that it tends to beget that sense of reverence of which Benjamin Kidd says, "It is a preponderating element in the type of character which the evolutionary forces at work in human society are slowly developing and with which are tending to be closely allied the qualities of great mental energy, revolutionary enterprise, powers of prolonged and concentrated application and a sense of single-minded devotion to conceptions of duty."

In the very beginning of his studies the medical student is brought into investigatory relationship with that which he has heretofore thought of as an entity, a being, a mystery, and which, now put into his hands for demolition, he finds to be a most wonderful and delicately constructed machine, in the study of which he may be said to pass through much the same process of mental evolution as that attributed by Professor Giddings to primitive man. He is lost in marvel at the compact arrangement of muscular tissues; regards, as might the explorer of a buried city, the system of canals which carry quickening fluid to the outermost circumvallation and of drains into which are cast waste matters to be discharged without the walls; while the glistening white lines of nerves, sending their branches in a network between muscles and under and over canals and drains, reveal to him the suggestion of a system for the communication of intelligence and the issuance of governing mandates to which the combined telegraphic and telephonic services of the greatest city built by human hands have no comparison in relative extent or perfection. There is probably no point in his career of so much initial portent as that in which the student, in the dissecting-room, for the first time lifts the wet sheet from a face that he has never known, but behind which there dwelt and through which there have been expressed all that emotion and desire can crowd into the compass of a human life; it is a period in which he either consecrates himself or turns back; if he be honest he does one or the other, if he be a pretender he may, it is true, continue and complete his medical school course and go out into the broader school of work, but without the consecration he will inevitably fail of his highest possibilities as a physician.

The impress which is made by the study of anatomy upon the truly thoughtful man cannot but be emphasized in the physiological laboratory where the student learns the values and uses of the different parts of the human machine and finds the answers to the questions which the previous study of the structure of the silent body has evoked. Here and in the associated laboratories, he learns the chemical processes of the body in health and disease, the supplementary relationship of the different organs, the provision for their maintenance and repair and comes to recognize and to know the functions of the microscopic organisms with which the body teems. Carrying with him the lessons born of research, he next passes into the wider school of clinical teaching and learns at the bedside that he has to study something more than the disease, and that to render the fullest meed of service as a physician he must come to know, patiently, tenderly and, in the broadest sense, sympathetically, his brother man.

From an economic standpoint the hospital may be defined as an institution in which capital and skilled labor combine to provide such members of the community as are temporarily disabled and without means of support, with the maintenance and care which shall fit them to become again self-supporting and active community factors. The hospital of to-day is something very much more than a mere repair shop, it is a school full of object lessons in the application of those qualities which are the uprights, the girders, and the binding rods of the modern social structure; in the first place, it is the most absolutely clean of all human habitations, and the present splendid successes of surgery in the amelioration of suffering and the preservation of life are due not only to the application of trained skill and intelligence, but to its operations under conditions of absolute sterilization which are microscopic in their minutiæ.

At the conclusion of Dr. Blake's paper, President Bowditch came forward and said:

"Now, gentlemen, it is my pleasant duty to ask your attention to our honored ex-President who has cultivated the fields of medicine and literature with equal success, and who has kindly consented to express himself in his own charming verse on the "Evolution of the Physician."

In part, Dr. S. Weir Mitchell spoke as follows:

"Mr. President and Fellow Members of the Congress: I will say a word in explanation of the unusual fact of my appearance here. It is perfectly well-known, I venture, that never before in the history of medicine has a Congress been addressed in verse. For this novelty, you may thank the committee of the Congress, and my friend, its President."

At the conclusion of the reading of the poem, Dr. Mitchell was greeted with prolonged applause and was enthusiastically congratulated. The poem was a fine contribution to literature and was delivered with freedom and appropriate gesture. The doctor's honorable, dignified and humanitarian station in life was described in glowing language. The priests disagree, but doctors extend the universal hand of fellowship and goodwill. One gem of the poem is as follows:

What sense of pleasure won that helping hand,
You best can tell, you best can understand;
Who looking back across your busy years,
Know what your hands have spared of pang
and tears.

There was prolonged applause when the lines rang out,

One bugle-note or one battle-call,
One watchword—DUTY—that is all.

Congress adjourned until evening when an address was delivered by the President on "The Medical School of the Future," which appears in full in this issue of the MEDICAL NEWS.

Hospital Bequest.—The Germantown (Pa.) Hospital and Dispensary is to receive $58,000 to be known, from the name of the donor, as the Lambert Lare Endowment Fund.

AMERICAN SURGICAL ASSOCATION.

Twenty-first Annual Meeting Held at Washington, D. C., May 1, 2, and 3, 1900.

FIRST DAY—MAY 1.

Perforating Ulcer of the Duodenum.—The scientic business of the American Surgical Association was introduced by the President, Dr. Robert F. Weir, of New York, who read a paper upon the above mentioned subject, which is published in this issue. (See page 690.)

Non-Perforating Gastric Ulcer.—Upon this theme Dr. Wm. L. Rodman, of Philadelphia, read the first paper in a series upon surgery of the stomach. In the treatment of no other disease is there greater need for a perfect understanding between physician and surgeon. Since the worst complications may develop unexpectedly, there is but one safe rule to follow, and that is for the physician to treat all patients having gastric ulcer, either in a hospital or at their homes, in conjunction with a surgeon. Three-fourths of all cases of non-perforating gastric ulcer can be cured by medical means; but if success does not follow medical measures in four or five weeks, surgical relief should be sought. Excision of the ulcer is the ideal treatment in the face of uncontrollable vomiting, suspected malignant degeneration, etc., but gastro-enterostomy gives almost as good results, and is to be preferred in all cases in which severe hemorrhage follows from a posterior situation of the ulcer. The presence of firm adhesions or of a multiplicity of cancers makes partial gastrectomy particularly dangerous. At its best, excision has a mortality of 15 per cent.

Dr. Rodman does not advise operation for hemorrhage either during the first attack or during recovery from it. Only 8 per cent. of patients who bleed from the stomach die. Even in a second hemorrhage it may be advisable to wait. But the published records of cases show that delay after a second severe hemorrhage has more than once cost the life of the patient. The results of operation in acute hemorrhage are encouraging and are growing better each year. Robson's tables, with a smaller number of cases, show a mortality of 64 per cent. after operations for acute hemorrhage; but some cases are incorrectly quoted by him. Dr. Rodman made a more exhaustive search and found 31 such operations with only 11 fatalities—a mortality of 35 per cent. Surely not a prohibitive mortality since most of the patients operated on were in desperate condition. Far better results have followed operations upon patients suffering from constantly recurring small hemorrhages; the mortality being only 16 per cent. Various operations have been performed, but gastro-enterostomy has been and is likely to remain the operation of choice, because one can never be sure of finding the bleeding point, even when the stomach is opened and examined in a good light; and one can never be sure that there are not multiple ulcers. Such measures as ligation of the mucous membrane *en masse*, cauterization of the ulcer, ligation of the bleeding vessel and ligation of the main artery are too difficult or uncertain for general adoption. Pyloroplasty, once in favor, is steadily losing ground before gastro-enterostomy, which has been performed for chronic small hemorrhages 12 times without a single death.

Perforating Ulcer of the Stomach.—The second paper in the series upon surgery of the stomach was read by Dr. J. M. T. Finney, of Baltimore. Success in operation depends on early diagnosis. There are no distinctive symptoms of impending perforation, but the perforation itself is attended as a rule by well-marked phenomena. Sudden sharp pain in the upper part of the abdomen, often accompanied by vomiting and symptoms of shock, localized tenderness and marked rigidity of the abdominal muscles with retraction have been generally noted. Later, there is gradually increasing distention, possibly with free fluid in the peritoneal cavity. Another important symptom, to which thus far no attention has been paid, is the development of marked leucocytosis. This condition of the blood is never seen in connection with gastric ulcer except after perforation, or a severe hemorrhage, or a sudden change from absolute rectal feeding to feeding by the stomach. This development of leucocytosis is an important symptom, and should always be looked for, but too much reliance must not be placed upon it as at times it has been found wanting. The reader warned against the use of opium before operation, because it may cloud the diagnosis and also prejudice the chances of recovery. The operator should not delay operation on account of shock, for the operation is calculated to relieve the cause of shock, and the anesthetic itself has a beneficial stimulating effect. In doubtful cases one should open the abdomen to establish the diagnosis, using for the purpose cocaine anesthesia, which may be supplemented, if the patient complains, by a few whiffs of ether or chloroform. The surgeon should systematically explore the stomach, passing from the cardiac end over the anterior wall to the pylorus, and then along the lesser curvature; and then, lifting the stomach, he should examine the posterior wall. Dr. Finney insisted upon the necessity of thorough cleansing of the intestines, coil by coil, and of the whole peritoneal cavity by irrigation and wiping with gauze pledgets. Adhesions should be respected. If the operation is performed early and the peritoneum is thoroughly cleansed, the abdomen may be closed. In doubtful cases it is better to drain. Post-operative distention, most marked when opium has been freely given before operation, should be treated by calomel in broken doses followed by salts, high enemata of glycerine and water or glycerine and oil. Washing out the stomach and the application of the Paquelin cautery to the abdomen are, also, useful measures.

Prognosis depends upon several factors: The condition of the stomach, empty or full when perforation has taken place; the interval between the last meal and the perforation; the time elapsing between the perforation and the operation; the number and size of perforations; the position of the patient at the time of perforation; the perfection of the operative technic, and, finally, on the nature of the infectious agent, whether streptococcus pyogenes or not.

Malignant Diseases of the Stomach and Pylorus.—Dr. W. J. Mayo of Rochester, Minn., urged the necessity for an exploratory incision in every instance in which cancer of the stomach is suspected. If the surgeon waits for a certain diagnosis he will be too late. It has been suggested that the same principles of thorough extirpation which are giving such good results when applied to cancer of the breast, should be applied to gastric cancer; but it is well to remember that glands may be enlarged from septic causes. In more than half of the 28 patients upon whom Mayo has operated for non-malignant gastric dilatation, enlarged glands were palpable, due to accompanying gastritis. Many patients die of cancer of the stomach without glandular involvement, and even if the glands do become involved their situation is such that their removal is practically impossible. Malignant disease of the stomach has a peculiar depressing effect on the patient. The nutrition is bad, and the healing power is greatly reduced. Ascites even in a limited degree is a contraindication to operation. The diagnosis even after the abdomen has been opened is not always clear. There are no definite universal signs upon which to base a diagnosis. Four of Czerny's patients upon whom gastro-enterostomy was performed, lived so long as to make it pretty certain that the diagnosis of cancer was an error. If the disease is cancer, too extensive for extirpation, yet not requiring a palliative operation, the abdomen should be closed by the Halsted method, which will allow the patient to get about in a few days and to leave the hospital in a week. Complete gastrectomy is probably destined to become a most valuable operation, but this the future must finally determine. Operations confined to the pyloric end of the stomach have been largely practiced, and are on the whole unsatisfactory. The late diagnosis has been in part responsible. Surgeons in view of the absolutely unfavorable prognosis have sometimes performed operations too serious for the strength of their patients. Kocher's operation, closing the wound in the stomach and forming an independent anastomosis between the duodenum and stomach, has been generally adopted as the safest pylorectomy. Gastro-enterostomy is the most generally useful palliative operation in conditions of pyloric stenosis beyond radical treatment. Two methods of gastro-enterostomy have stood the test of time, simple suture, and the Murphy button. The results published by the advocates of the two methods are about the same, and depend apparently more on the operator's skill than on the method. Surgeons are also divided as to the relative merits of an anterior posterior-enterostomy (Wolfler's method), or posterior gastro-enterostomy (von Hacker's method). By the latter procedure the posterior wall of the stomach is reached by traversing the cavity of the lesser peritoneum. It is claimed for this method that the food passes more readily downward, that a button if one is used is less likely to drop into the stomach, and that regurgitant vomiting of bile and pancreatic juice is less frequent. These are all good claims if true, but a study of the published cases of both methods shows little difference in the after effects, and since the anterior method is simpler Dr. Mayo prefers it. The point chosen for the anastomosis should be about an inch above the lower margin of the stomach, and as near the pylorus as possible, yet it must not be near enough to be encroached upon by the disease. When anastomosis is complete, the weight of the loop draws the stomach over until the point of attachment is the bottom of a funnel. Dr. Mayo has performed this operation thirty-one times, and has seen regurgitant vomiting in only two instances, both of the patients in question being sufferers from malignant disease. In all of these patients the Murphy button was used without supplementary suture. There were three deaths after eleven operations for cancer, and one death after twenty operations for benign trouble.

SECOND DAY—MAY 2D.

Benign Obstruction of the Pylorus.—Dr. F. Kammerer of New York divides cases of benign obstruction into those which are congenital and those which are acquired. The latter demand the aid of the surgeon. The pyloric stenosis may be due to ulcer, benign tumors, syphilis, gall stones (by secondary inflammation). Stenosis may also be due to hyperchlorhydria. This last affection is considered by some to be a functional neurosis. The result of spasm is stasis and decomposition of food. Hypersecretion is the natural result, which in turn causes firmer contraction of the pylorus. When the abdomen is opened and the stomach is relaxed, no evidence of spasm of the pylorus may be visible. However, spasm has also been observed during operation. Various attempts have been made by means of ingested gutta percha balls and elastic sounds passed by the mouth to dilate the contracted pylorus. Ulcer is a contraindication for such treatment, which, moreover, in no case seems to have had any permanent good effect. Excision of the pylorus for ulcer or benign stenosis is an operation with a mortality variously estimated at from 18 to 34 per cent. Resection when no ulcer is present seems somewhat less dangerous than in the presence of an ulcer, but it is an operation which is being rapidly abandoned. Divulsion carried out either through an incision into the stomach or by invagination is another operation which has no future, for the reason that pyloroplasty and gastro-enterostomy have many ad-

vantages not possessed by the older operations. According to published reports of cases the mortality of both pyloroplasty and gastro-enterostomy when performed for benign stenosis is about 15 per cent.; but writers sometimes do not include those fatal cases in which pyloroplasty is attempted and on account of adhesions has to be abandoned for a resection of the pylorus; and, moreover, the newest reports of gastro-enterostomy give a far lower death-rate to this operation than earlier statistics. The presence of extensive adhesions must be considered a contraindication to pyloroplasty, for, although division of adhesions alone has sometimes cured a patient, broad adhesions usually reform, and an inflamed gastric wall is not suited to suture. No such complications ever prevent the surgeon from the proper carrying out of gastro-enterostomy. The immediate results of pyloroplasty are usually good. There is a restitution to normal of the affected parts. Gastro-enterostomy produces an abnormal condition and may be followed by fatal regurgitation. This is more common in carcinomatous than in benign cases and seems to occur more frequently after anterior than posterior gastro-enterostomy. The enforced recumbent position of the patient adds to the difficulty of the stomach in emptying itself, and a broad line of suture seems to flatten the intestine against the stomach and tend to obliterate its lumen. If a posterior gastro-enterostomy is performed and Murphy's button is employed the evils of regurgitant vomiting may be avoided. Kammerer has performed such an operation eleven times in the past two years (nine of the patients having cancer) and in no instance has there been any evidence of regurgitation. Some Continental operators of large experience, such as Carle and Czerny, are quite of the same mind. Doyen performs a posterior operation suturing without a button; but Mikulicz, who formerly advised a posterior operation with the button, has returned to the anterior operation with suture alone. In the use of the button, one or two simple sutures to fix each half in its appropriate viscus are better than purse-string sutures, which cause a puckering of the coats and so make an even pressure and necrosis uncertain. The button may drop into the afferent limb of the jejunum or into the stomach, but trouble from this cause has rarely been mentioned. Constriction of the colon by the anastomosed intestinal loop, or the reverse, is a complication which can hardly occur with posterior gastro-enterostomy as the normal relations of these organs are scarcely altered. In comparing the remote results of pyloroplasty and gastro-enterostomy, the frequency of relapse must be first considered. After the former operation relapse may be due to a further formation of pyloric cicatricial tissue, or to the fixation of the pylorus in an unfavorable situation by adhesions, or to progressive gastric atony, while relapse after gastro-enterostomy may result from contraction of the orifice, which is rare and has been attributed to inaccurate suture of the mucous membrane. In conclusion, it may be said that in well-selected cases the results of pyloroplasty, both immediate and remote, are as good as those of gastro-enterostomy. In cases in which there is no fixation of the pylorus, and not much inflammatory thickening, nor too much dilatation of the stomach nor weakening of its walls, pyloroplasty is as safe as posterior gastro-enterostomy with the button; safer perhaps than the same operation by suture. It is free from the intestinal complications of the latter, to which allusion has been made above. But it has one regrettable feature—an uncertainty of result, and, when the dangers of two operations are about equal and one of them offers greater assurance of success in every case, the latter should always be the operation of choice.

Gastric Dilatation; Gastroptosis.—Dr. B. F. Curtis of New York said that the surgeon need not concern himself with fine distinctions as to the exact outlines of the normal stomach. It is at least certain that in normal individuals the pylorus is so sheltered as to be nearly out of reach of the palpating fingers, while the lesser curvature is quite so. When these parts can be felt therefore, a condition of gastroptosis exists.

Gastrectasia is an enlargement of the stomach combined with motor insufficiency, that is to say, a relative insufficiency, a disproportion between the muscular power and the resistance to be overcome. All obstructions at the pylorus are not followed by gastrectasia, because in many cases the muscular hypertrophy is sufficient to overcome the pyloric resistance and empty the stomach.

Atonic dilatation is often associated with gastroptosis. The weight of an enlarged stomach may stretch its attachments and cause its descent, and, on the other hand, gastroptosis may obstruct the escape of food and cause an obstructive dilatation. In the majority of cases gastrectasia and gastroptosis coexist because they have a common origin affecting the general nutrition of the body, and in which there is often a strong nervous element.

The symptoms of atonic gastrectasia are a feeling of fulness and weight after eating, without pain. The appetite is often maintained and there is great thirst for water which is not absorbed by the stomach and its passage to the intestine is delayed. Other symptoms are headache, dyspnea, dizziness, constipation (occasionally diarrhea), marked emaciation, a very slow pulse, and scanty urine. There may be eructations of gas, with or without vomiting. Inspection, palpation and percussion will show an enlarged stomach. The stomach-tube will show a retention of food for a much longer than normal period, and motor insufficiency can also be demonstrated by testing the urine after ingestion of salol. The size of the stomach should be proved by inflating it with air or by the bicarbonate of soda method.

The prognosis of extreme atonic gastric dilatation is not favorable, but the changes take place

more slowly than in obstructive dilatation. Medical rather than surgical treatment is usually indicated; but the latter should be resorted to when the former fails to keep the patient from continuous loss of weight and strength. Either gastroplication or gastro-enterostomy may be performed.

Gastroplication is an infolding of the walls of the stomach. It is contraindicated if pyloric obstruction exists, and is unnecessary if such an operation as pyloroplasty is done at the same time. It has, therefore, a limited field, and less than thirty cases have been reported. In many instances the subsequent condition of the patients so operated upon was not given, while in some instances the operation was ill advised. It may be safely inferred, however, that the operation has only a small mortality, and that in suitable cases it produces good results. Several methods of folding in the stomach have been suggested, Weir's plan being perhaps the best. He makes several longitudinal folds, stitching each separately. The rival operation is gastro-enterostomy with a mortality somewhat higher (10 per cent. in non-malignant cases), but which has the distinct advantage of relieving the patient, even although pyloric obstruction is present; while a gastroplication can hardly be expected to give relief, if pyloric obstruction coexists.

Gastroptosis is a sinking of the lower portion of the stomach, as shown by a change in the position of the lesser curvature. Meinert claims that gastroptosis is present in more than 80 per cent. of women. To a considerable degree it may exist without symptoms. These develop in proportion to the amount of pyloric obstruction present. Palpation and inspection of the abdomen may give a suspicion of gastroptosis, but for an accurate diagnosis it is necessary to dilate the stomach with gas or air. Then the lesser curvature and the pyloric portion come out clearly. It is only recently that this condition has been met by surgical measures. The indication is clearly to support the stomach from above, and Duret and, after him, Rovsing have sutured the anterior wall of the stomach to the parietal peritoneum close up to the diaphragm, and have succeeded in relieving their patients. This operation is called gastropexy or gastrorrhaphy. Various stitching procedures have been successfully carried out by Treves, Byea and others, in order to shorten the supports of the stomach, or to attach it to parietal peritoneum as high up as possible.

In conclusion the speaker said that improvement is not difficult to bring about whether one secures the liver only, sutures the stomach itself, or the mesocolon to the abdominal wall, or shortens the gastrohepatic omentum, or finally, removes a segment of the abdominal wall. The condition is usually a complex one, and probably a simple gastrorrhaphy will not be sufficient, but should be assisted by right nephrorrhaphy, hepatorrhaphy, and in some cases by the Depage-Hannecort operation. In women similar supporting operations on the genital organs will also be necessary to assure a good result.

Hour-Glass Contraction of the Stomach.—Dr. F. S. Watson of Boston said that this lesion has a surgical history of only ten years—and the principle of anastomosing the two portions of the stomach was first carried out by Wölfler in 1894. Since then anastomosis has been carried out in one form or another many times. Altogether thirty-five operations upon an hour-glass stomach have been published. The speaker described a case on which he had successfully operated. His plan was to suture together the parts to be anastomosed, before the stomach was opened. Communicating incisions were then made, which of necessity exactly coincided, and were sutured internally. The extra incision in the stomach was then closed. The choice of method must depend on the conditions found. In some instances gastro-anastomosis is not practicable because it would bring too great a tension on the parts. Gastro-enterostomy fails to utilize the digestive capabilities of the pyloric half of the stomach, and if the cardiac portion of the stomach is atrophied, this loss of the pyloric portion will be serious—a plastic operation is in many cases technically inadvisable while a resection of the constricted portion is too dangerous for practical use. Whatever operation is chosen, the surgeon should not forget the advantage of freeing adhesions—as this of itself has been known to cure many annoying symptoms.

Diagnosis of Cancer of Stomach.—Dr. J. C. Hemmeter of Baltimore said that the only diagnosis of cancer of the stomach which is of interest to the surgeon, is an early diagnosis; that is a diagnosis before the symptoms of cancer have appeared. Such surgeons as Czerny, Rindfleisch and Kraske oppose operation on gastric cancer after a tumor can be made out. Against an early diagnosis are first the indifference of the patient and unfortunately many times of the physician, before well marked symptoms arise; and second the fact that chemical and microscopical tests of the gastric contents themselves take so much time. The absence of hydrochloric acid is not a reliable sign, for patients may die of cancer with hydrochloric acid in their gastric contents. The presence of lactic acid is merely due to stagnation and while a valuable sign it occurs too late to be of service in making an early diagnosis. The same is true of the Oppler-Boas bacillus. The pylorus is so situated that a tumor of it may grow to a considerable size and still be not palpable. Electro-diaphany and the X-rays are valueless for early diagnosis. Gastroscopic examination is dangerous. Curetting the surface of the stomach is a newer method of diagnosis, which yields sure evidence if a typical bit of tissue can be secured; but cancer of the stomach must already have progressed to a certain degree before a bit of tissue can be obtained with a weighted stomach tube, which is the harshest instrument which Hemmeter considers safe to use. This means of diag-

nosis is still undeveloped, and as yet the early diagnosis of carcinoma of the stomach can only be made with certainty in a few cases. Although surgical treatment of cancer of the stomach is at present the best treatment we know of, it seems certain that it will some day give way to a form of treatment, to be discovered by the Pasteurs, or Klebs, or Kochs of the future who shall show us a method of treatment which shall cause the cancer to melt away as the antitoxin treatment causes the diphtheritic membrane in a child's throat to disappear.

Gastric Functions before and after Gastro-Enterostomy.—Dr. Charles S. Fischer of New York presented the results determined by him by following up for some years four cases in which gastro-enterostomy was performed for non-malignant conditions. The speaker said that only by observations extending over periods of months and years before and after operation can definite conclusions as to the changes brought about by the operation be made. The two functions of the stomach which are especially concerned are its secretion of hydrochloric acid and its motility.

In one case in which gastro-enterostomy was performed for hyperacidity, pyloric obstruction and dilatation, the immediate results were excellent. The hyperacidity, however, progressively increased, and two years after operation it was greater than ever. The motor conditions of the stomach were much improved, and the stomach was found empty upon lavage within the necessary time limit. A second case was similar up to the time of operation. This patient also was much improved by the operation, but fourteen months later it was found that the change in hyperacidity did not keep pace with his general improvement. In this case slight atony existed fourteen months after operation, which could be traced to improper hygienic surroundings. In the third case the hyperacidity was purely functional. The pyloric stenosis and slight dilatation were secondary. After operation examinations showed that hyperacidity sometimes came on as a result of mental excitement, and sometimes was absent. The fourth case was followed for four years prior to operation, during which time simple gastric dilatation, as a result of atony, developed. At first there was nervous dyspepsia with varying acidity and a tendency to gastroptosis. A year later the condition had changed to subacidity and atony began to show itself. From that time there was progressive weakness and dilatation of the walls of the stomach and relaxation of the abdominal walls, and the right kidney became movable. The patient's general health was much improved by the operation, but one year later the gastric dilatation still existed and the subacidity had progressed to a fair state of achylia. The motor functions appeared normal. These cases represent three distinct types of benign chronic gastric trouble: Primary pyloric obstruction with secondary hyperacidity and dilatation (cases I and II); primary functional hyperacidity, with secondary pyloric spasm and dilatation (case III); and primary neurotic atony, with secondary subacidity and dilatation (case IV). The consideration of these results, and especially of the results in the third and fourth cases, is of the greatest value to the physician, for there are cases in which operation is one of expediency and not of necessity. In case III, after operation, there was a general improvement in the health of the patient and a considerable gain in weight, and no dyspeptic symptoms. Yet in one year the changes in the mucous membrane progressed as far as to give a condition of achylia, which cannot possibly be explained on the basis of continued imitation due to food stasis, for the stomach emptied itself properly. The conclusion is obvious that hypertrophic or atrophic changes of long duration may be progressive after operation. In those cases in which enlargement and impaired muscular activity are relative and due to obstruction, gastro-enterostomy, by removing the obstruction, gives the stomach an opportunity to return to its normal condition. Gastro-enterostomy has a beneficial effect on the action of the intestines. In the first three cases the constipation was due to the pain caused by the pyloric spasm—a reflex constipation. It was entirely relieved by operation. In case IV the constipation was atonic, alternating with fermentative diarrhea. In this case, after operation, the stools became normal and regular, as a result of improved nutrition.

Adhesions of the Stomach.—Dr. A. T. Cabot of Boston said that adhesions are chiefly of significance when situated about the pylorus. Sometimes the digestive disturbances are spread out over the whole life of the patient, but usually they come on in distinct attacks like attacks of gall-stone colic. Vomiting is prominent, and is probably merely a result of the pain. The latter may be spasmodic or lancinating. The pain may extend around the body as a girdle. Sometimes the digestion in the interval between the attacks of pain is good, sometimes poor. The severity of pain is usually the cause for operation.

Stricture of the Esophagus Following Gastrostomy.—Dr. F. S. Dennis of New York presented a patient who suffered from a stricture of the esophagus following typhoid fever. The patient was reduced almost to the point of starvation when a gastrostomy was performed. Since then he has gained flesh and is now in practically perfect health.

(To be Continued.)

ASSOCIATION OF AMERICAN PHYSICIANS.

Fifteenth Annual Meeting, Held at Washington, D. C., May 1, 2 and 3, 1900.

FIRST DAY—MAY 1ST.

Truth in Medicine.—The president's address upon this subject was delivered by Dr. E. G. Janeway of New York (see page 690).

A resolution was carried asking that Congress remit the present war-tax on legacies to charitable, religious and educational institutions. It was pointed out that if Johns Hopkins had died during the past year, the University founded by him would have lost more than $1,000,000 in tax to the Government.

A resolution was passed to provide for the drawing up of a resolution to oppose the Senate bill introduced by Senator Gallinger which would limit animal experimentation in the District of Columbia, Surgeon-General Sternberg moved the appointment of a committee to carry on the opposition more effectively. This was adopted.

A paper on endocarditis in relation to other diseases to have been read by Dr. William Osler of Johns Hopkins, Baltimore, to whom the subject was referred for special treatment with the idea of evoking discussion, but Dr. Osler was unavoidably absent.

Diabetes with Low Specific Gravity.—Dr. James B. Herrick, of Chicago, read an account of some cases of diabetes with very low specific gravity despite the presence of sugar in the urine. Usually there is a ratio between the amount of sugar in the urine, the quantity of urine passed and its specific gravity, so that the severity of the mellituria may be estimated from the other factors, but this is not an invariable rule. Eichhorst has had a case of glycosuria with urinary specific gravity of 1008. Naunyn has seen cases with specific gravities from 1010 to 1015. As low as 1003 has been reported. These low specific gravities occur not only in the polyuria immediately preceding or following an acute exacerbation of the diabetes, but also at the height of the glycosuria. Various reasons are given. Low specific gravity occurs in weak patients, especially if they are taking large quantities of water. In one of Dr. Herrick's cases the patient was taking large daily amounts of a mineral water supposed to be curative for diabetes. His urinary specific gravity never reached 1020. In a case of obese diabetes in Dr. Herrick's practice the specific gravity was but 1004. To be sure there was no error, it was tested by several urinometers. The patient had been drinking beer excessively just before passing 24 ounces of urine and to this was due the low specific gravity. Cases of diabetes complicated by interstitial nephritis are especially apt to have low specific gravity of their urine. It is not enough then to look for sugar in the urine only when the specific gravity is above 1020. If interstitial nephritis is suspected or the patient is weak or takes liquids very plentifully, the urine should be carefully tested for sugar no matter how low the specific gravity.

Urinary Casts and Diabetic Coma.—Dr. Herrick has had three cases of diabetic coma recently, in all of which the development of coma was immediately preceded or accompanied by the presence of an abundance of granular casts in the urine. When the urine was allowed to stand for three hours about one-sixth of its volume was a gray or yellowish sediment almost entirely composed of these casts. Their number bears no relation to the amount of albumin present. They have been found 24 hours before an attack of coma. Their presence has been noted in the urine passed after exercise when three hours before they were not present and a little later symptoms of threatened coma supervened. In one case Dr. Herrick found them in the urine of a patient in whom diabetes had not been suspected, but who died 24 hours after the urinary examinations with typical diabetic coma. Naunyn does not think these casts pathognomonic of diabetic coma, but they may prove a valuable preliminary diagnostic sign. The kidneys seem to be overwhelmed by the toxins present in the circulation and the overtaxed epithelial elements give way with the production of these casts.

Uric Acid in Epilepsy.—Dr. James J. Putnam of Boston, in connection with Dr. F. Pfaff, has been repeating some observations made concerning the relations of uric acid to epilepsy. It was reported by Krainsky that before a seizure the amount of uric acid excreted was distinctly lessened, while afterwards it was increased. Drs. Putnam and Pfaff have failed to confirm this. The elimination of uric acid bears no relation to epileptic seizures. The uric acid doctrine dies hard, and its worshippers cling to it most faithfully. In Dr. Putnam's opinion, it is probable that too much weight has been thrown in recent years on the rôle of toxemias in the production of symptoms of disease.

Ascending Paralysis.—Dr. Charles G. Stockton of Buffalo reported a fatal case of this disease in a domestic servant of twenty-seven years. For some months before the development of severe symptoms there were noticed inexplicable nervous symptoms; pain, restlessness, sleeplessness, loss of weight (20 pounds), and weakness. Some improvement in the general symptoms and in weight occurred uring a month in the country. Later paresthesia developed, then anesthesia of the buttocks, followed by involuntary stools. The legs grew weak and at first painful, then senseless. Later the body and arms shared in the paralytic condition until finally the head alone had feeling and movement. The temperature had been regularly taken for months before, and was not abnormal. For several days before death it was 102° F. or above. An autopsy could not be obtained, but it was supposed to be a case of acute ascending myelitis. For some weeks before the end the urine was of a claret color. Chemical analysis showed the coloring matter present to be hemato-porphyrin. Some trional was administered several weeks before death, but not enough to cause the appearance of hemato-porphyrin in the urine. Hemato-porphyrinuria has been reported in certain cases of post-diphtheritic palsy, and it is a question whether this symptom should not be looked for in other forms of acute paralyses.

Trional and Hemato-porphyrinuria.—Dr. Putnam of Boston said in the discussion that re-

cently he had a case very similar to that reported by Dr. Stockton. The same train of clinical nervous symptoms, beginning with impairment of sensation and culminating in total loss of motion was noted. The diagnosis lay between acute ascending paralysis, Landry's disease, and multiple neuritis. The same claret-colored urine noticed by Dr. Stockton was observed, and the color was found to be due to hemato-porphyrin in the urine. Some trional had been taken by this patient also. Though none of the drug was prescribed for two weeks before the fatal termination yet the hematoporphyrinuria continued. A most careful postmortem was made by Dr. Councilman, who reported the cord and brain to be absolutely unaffected, but a series of neuritic changes existed in many parts of the body.

Dr. Janeway said that he had under his care for the last year and a half a woman in whom a multiple neuritis of the most pronounced type developed. The greatest care had been taken to exclude all other forms of toxic neuritis, especially as regards alcohol and lead. The only conclusion possible, under the conditions, seemed to be that the active toxic agent in the affection was trional, which the woman had been taking for some time, in 20 to 25-grain doses for the relief of sleeplessness. The neuritis was of the severest type and the symptoms did not remit for months. It is only now, at the end of over a year, that her condition can be said to be notably improved.

Infant Immunity to Contagion.—Dr. A. C. Abbott of Philadelphia said it has long been said that very young children were but little liable to contagious disease, although exact statistics in support of the statement were not often quoted. From 23 to 32 per cent. of all children die under one year of age. Although many less die during other years, very much fewer die from contagious diseases during this first year. Of the infants who die from contagious diseases during the first year over 80 per cent. die during the last six months, and only 3 per cent. during the first three months. Now it is during the first three months that the infant mortality is highest from other causes. Some explanation is needed for this very striking immunity. Baumgarten has suggested that it is due to the fact that infantile tissues possess a resistive power for bacteria. This is, however, merely theory with nothing to substantiate it. It has also been suggested that children are more cared for at this earliest period. As a matter of fact, however, we know that the children of the poor are miserably neglected while young. Mothers, without any idea of sanitary precautions, nurse them and then confide them to the care of the little ones of the family for hours. The best explanation seems to be one derived from some recent observations of Ehrlich. He found that immunized animals did not confer immunity by direct heredity upon their offspring, but that as long as the young animals suckled they were protected from the disease to which their mother was immune by an immunizing principle, which is contained in the milk. These protective properties of the milk were amply demonstrated. Among human beings most women have had the ordinary contagious diseases and have acquired a lasting immunity. It is probable, then, that their milk contains an immunizing principle which protects the child from contagious diseases so long as it nurses.

In the discussion Dr. Trudeau said that Baumgarten's theory of the resistance of young tissues to bacteria certainly did not extend to animals. Young guinea-pigs can be infected very readily with any germ-disease.

Dr. George Shattuck of Boston said that diphtheria conferred no immunity, or at most a very temporary one, yet young children were also immune to this according to the statistics given. They were certainly not protected by any immunizing principle in the milk in the case of diphtheria, so that it seems to be evident that other factors besides protective milk play a rôle in making contagious diseases so very rare in the very young.

Recurrent Vomiting in Children.—Dr. J. P. Griffith of Philadelphia said that he has recently observed four patients with obstinate vomiting as their principal symptom, which seem to deserve special treatment. In severe cases the vomiting is so persistent and the constipation so obstinate that intestinal obstruction may be suspected. Death seemed imminent in two of his patients. Chloral and bromides were vomited. In one case the child lay helpless on its side for hours, with dark material, and sometimes blood, flowing from the mouth. It no longer had the strength to vomit. The child seemed too weak for morphine, but finally this was given hypodermically, and relief followed. In two other cases, however, morphine did not seem to give relief. In one case chronic appendicitis was suspected and an operation was performed. No other attack of vomiting occurred for eight months, and then a fatal attack developed. In none of the cases were there any kidney symptoms until the terminal stages, when albumin and casts were present in the urine, and in one case edema was noted. Leyden reported a series of cases of intermittent vomiting in adults, which came on without known cause. The attacks resembled the gastric crises of locomotor ataxia. Some neurologists claim that Leyden's cases were true gastric crises of latent tabes and one patient actually developed tabes later. In children, however, such attacks have been reported rarely. In Griffith's cases digestive disturbances and prodromes were absent. The attacks occurred at irregular intervals, from three weeks to sixteen months apart, and lasted from two to eight days. While death seemed inevitable, recovery occurred in two cases, and when the patients began to mend convalescence was rapid.

The attacks of intermittent vomiting seemed to be due to a neurosis on a toxic basis, emesis being the result of the effort by the gastric mucous membrane to eliminate the toxic material.

Character of Vomit.—Dr. Stockton said that a

word should be added about the character of the material vomited. Examination shows that it is practically pure gastric juice according to all the chemical tests. There is an excess of hydrochloric acid, and as soon as that disappears convalescence begins. A certain periodicity of the disease may be noted even in children. Dr. Stockton has never seen a death from the disease, though at times it has seemed impossible that the child should continue to live. Death must be due to some complication in an important organ besides the stomach.

Dr. Johnson of Washington said that in children intermittent vomiting always occurred in the offspring of neurotic parents. Usually the children were precocious, at times neurasthenic, often hysterical. Just when death seemed certain recovery came. At times the vomit contained blood, fresh, or more usually altered, so-called coffee-ground material. The symptoms of prostration were often intense. The extremities and tip of the nose became cold and cyanotic, the lips blue, the child became restless in its exhaustion. This choleraic condition seems to be due to the abstraction of water from the tissue by vomiting and can be relieved by the hypodermatic injection of normal salt solution. By this means also the toxin in the circulation, which may be the same as in neurasthenia, is diluted.

Dr. Kinnicutt of New York said that enteroclysis is also of great benefit in this condition. The increase of blood pressure also causes a freer elimination by the kidneys. Dr. Forchheimer of Cincinnati said that milder cases of this cyclic vomiting, apparently without definite pathologic basis, occur. In the intervals the children are constipated and are always neurotic. The malady has been called a psychosis by certain German neurologists. Hysteria is more frequent in children than has been thought. There are certainly toxins in these cases that are being eliminated by the stomach. The treatment should be directed to the intervals of the attacks. The constipation should be relieved, the child not allowed to overwork intellectually, nor over exercise physically. The general health should be improved.

Sanitarium Treatment of Pulmonary Tuberculosis and Its Results.—Dr. E. L. Trudeau of Saranac Lake, N. Y., then read this paper, which will appear in a subsequent issue of the MEDICAL NEWS.

Tuberculin and Its Uses.—In the discussion Dr. Bridge of Los Angeles said that tuberculin, even when used as carefully as by Dr. Trudeau, seems to do very little, if any, good. In other hands it often does harm. The use of any serum for treatment seems to lead inevitably to a neglect of other and especially the precious hygienic, dietetic, and therapeutic measures. If but rational means be employed the successful treatment of consumption outside of sanatoria is very possible. Three-fourths of the cases of incipient tuberculosis either are unable or cannot be persuaded to go to a sanatorium. For these the open air treatment at home can accomplish great things. Too many physicians labor under the delusion that the open air treatment means exercise in the open air. They advise long walks, bicycle riding and the like, and work untold harm on feverish patients. Some physicians also foolishly counsel the avoidance of the night air, as if there were any harm in the air itself after sundown. Then patients are allowed to eat often and what they wish instead of being counselled to eat often and plentifully of the most nutritious diet. Eat consumptives must, *nolens volens*, and their digestion must be cared for for this purpose. Dr. Soloman Solis Cohen of Philadelphia asked if respiratory gymnastics were not good for the consumptive. He had found them so in practice. He asked if Dr. Trudeau did not favor them. As to the tuberculin test Dr. Cohen thinks that it has positive disadvantages while its advantages are dubious. It should be employed only by the most skilful. While in Dr. Trudeau's hands it has been useful and its employment is thoroughly justified, it has, undoubtedly, been a fruitful source of harm in the hands of the inconsiderate and inexperienced.

Early Diagnosis of Tuberculosis.—Dr. Trudeau in closing the discussion said that a most useful means of early diagnosis of tuberculosis, which is too often overlooked, is the regular taking of the temperature several times a day for a week or ten days. When any disturbance of health exists, and the evening temperature runs above 99½° F., there is almost surely tuberculosis present. It is surprising how many careful physicians neglect this simple means of very early diagnosis. As to the use of tuberculin it seems to be a valuable means of diagnosis, and we need further information with regard to it. One thing is certain, it should never be used when there is fever or when the case is progressive. Some experiments on animals at Saranac seem to prove that the injection of such doses of tuberculin as are used for diagnostic purposes do not do harm. Guinea-pigs inoculated with tuberculosis did not die sooner as the result of injection of tuberculin. A still more demonstrative experiment was made upon rabbits. Injections of tuberculous material mere made into the cornea. Here the progress of the local tuberculous process can be watched very readily. Into some of the animals tuberculin sufficient to produce a reaction was injected. Others were left untreated. The progress of the tuberculous processes was the same in both classes of animals. This would seem to be a demonstration of the inocuousness of the tuberculin.

Patients suffering from tuberculosis need the care of a physician to supervise their exercise, diet and digestion. This they do not have continuously for months outside of a sanatorium, and, consequently, the open air treatment at home usually fails.

Oxaluria.—The secretary read, for Dr. C. A. Herter of New York an account of some work done in his laboratory by Dr. Helen Baldwin of

New York, on oxalates in the urine. Oxalate of lime is found in normal urine in varying quantities from traces up to 35 milligrams in the twenty-four hours. The average excretion of oxalates is about 10 milligrams a day. Most oxalates come from oxalates consumed, and exist quite plentifully in certain plants, as in rhubarb. There is only one condition in which the oxalates are produced within the body. This occurs in certain cases of fermentative dyspepsia. The withdrawing of a test meal, even where only proteids were given, has shown that oxalic acid can be formed *de novo* in these circumstances.

In the discussion Dr. James Tyson of Philadelphia said he does not think that oxalate of lime in the urine is ever of pathologic significance. It occurs irrelevantly in nervous and in perfectly healthy people. No connection can be traced between it and any symptom. It can be removed from the urine very readily by an absolute milk diet. Vegetables seem to favor its recurrence.

Acute Suppurative Gastritis.—Dr. Kinnicutt of New York presented the stomach of a patient dead from acute suppurative gastritis of the phlegmonous variety. The submucous gastric tissue was more than an inch thick near the pylorus. The tissues were all infiltrated with pus corpuscles. The only organism found in the stomach was a streptococcus growing in long chains eight to ten members in each chain. The patient was an alcoholic. The symptoms developed after a preliminary chilliness, not a chill, followed by fever with symptoms of pain. A state of collapse then developed. The affection was diagnosed peritonitis from perforation of a duodenal ulcer. He was considered too weak for operation.

Dr. Janeway said in discussion that in a similar case the diagnosis was perigastritis, cause unknown. These cases were extremely difficult of diagnosis.

SECOND DAY—MAY 2D.

Actinomycosis-Organism and Lesions.—Dr. J. H. Wright of Boston exhibited stereoscopic pictures of the ray fungus and its lesions. He said that the disease is commoner in the human being in this country than is usually thought. The lesions are small abscesses in a connective tissue capsule. Within these abscesses may be found the radiate filaments from which the disease derives its name. Between the filaments there is hyaline material which is really composed of dead filaments. Club-shaped characteristic appearances occur at the periphery of a colony. There are also degenerated filaments. When the disease becomes generalized, abscesses may occur in the kidney, lung, liver, the abdominal wall and in the extremities. Dr. Wright exhibited an abscess of the human heart wall bulging into the ventricle. The disease in this case began in one of the vertebræ and spread to the pleura.

Diagnosis.—The diagnosis of the disease can be made from certain granules that occur in the pus of the abscesses. They are gray in color, often of pearly lustre, of the size of a head of a pin or smaller. When the granules are crushed beneath a cover glass, they break up into segments that have, under a low power, a chrysanthemum appearance. This radiate structure is very characteristic, but to obtain it the granules must be perfectly fresh when crushed. The microscopical diagnosis depends on the presence of filaments which branch, this is essential, and in the midst of these there occur darker bodies, the so-called spore forms. In the discussion Dr. Da Costa of Philadelphia said that the most effective drug for the treatment of actinomycosis is potassium iodide in large doses. This has commended itself to the veterinarians and has in Dr. Da Costa's hands given very good results in human beings, especially at early stages of the disease. Properly used the remedy is permanently curative.

A New Pathogenic Fungus.—Dr. Hektoen of Chicago exhibited slides and photographs of a sporothrix resembling that first described by Schenck at Johns Hopkins. It was found in a boy in whom multiple abscesses occurred on the hand and arm, as many as twenty in all having been opened. In the thick, viscid pus from these abscesses, this sporothrix was found in pure culture. In stroke cultures it grows with radiate feathery margins. In plate cultures spore bearing threads occur at the periphery. Conidia or spores are noted all along the filaments but especially at the ends where five or six may be grouped together. There are distinct septa in the threads.

The organism is especially pathogenic for mice and white rats. It produces typical ulcers with undermined edges. On the peritoneum it produces tuberculiform nodules. The spores are club shape, not unlike those of actinomycosis. Only three cases of the disease have been reported in the human being, and one of these was recognized clinically but not studied bacteriologically. Infection took place in all three cases through a small wound of the hand. The cases occurred in widely separated parts of the country. It is probable then that the disease exists much more commonly than might be thought.

Pernicious Anemia.—Dr. Richard C. Cabot of Boston detailed some conclusions arrived at after a study of 110 cases of this rare disease. Although contrary to the usual experience there were more men than women among his cases. Only four of the cases followed parturition. Pernicious anemia is distinctly a disease of the age past forty. Eighty-two of his patients were over forty, nineteen over sixty, four over seventy, the oldest was seventy-nine, the youngest nine years of age. The fatal anemias in early childhood are not included in this list. The number shows that the disease is much more frequent near Boston than has been thought. The same probably holds true for the rest of the country. It is interesting to know what it is called when not recognized. In one case near Boston it was diag-

nosed general tuberculosis, by which was meant supposedly acute miliary tuberculosis. In three cases because of the presence of fever it was thought to be a typical protracted typhoid fever.

Etiology.—This is difficult to trace. Fourteen cases occurred about the time of the menopause, but could not be said to be connected with it. Four cases had tertian malaria, but this does not seem a causal factor despite all that has been said on the subject. Only one patient gave a history of syphilis. Thirty-seven had suffered from hemorrhage but this seemed to be a symptom, not a cause. The favorite sites of bleeding in the order of frequency were the bowels, nose, and gums. In one case a hemorrhage of over a pint took place from the external meatus of the ear—an unusual location for the source of bleeding in so large a quantity.

The disease is never constantly progressive. A number of the cases felt tolerably well and were even able to work at intervals. There is no constant relation between the symptoms and the extent of the anemia. One man with but one-half million of red blood cells wanted to go to work; another with a blood count of three millions felt incapacitated. There is some other factor besides anemia, probably a toxemia, that influences the symptoms. The first symptom in every case is intense muscular weakness. Dyspnea is another universal symptom. Gastro-intestinal symptoms are common, but they are neither constant nor progressive. Intervals of perfect digestion occur. This would not be true if the disease were due as some claim to atrophy of the gastric tubules. The appetite is capricious, often poor. In two cases appetites were too great to be satisfied. Fever is noted two-thirds of the time. In two cases the dark urine so often spoken of was present. In the other cases pale urine was excreted. In one-third of the cases nerve symptoms developed. These are due to changes in the spinal cord and may simulate tabes or diffuse myelitis. There is always a marked leucopenia. In one case less than 1000 white cells to the cubic millimetre were present. Megaloblasts were found in every case where more than one blood examination was made.

Remissions — Causes — Significance. — Pernicious anemia is never progressive, despite the use of that word in its usual name. The causes of the remissions are unknown. They are usually attributed to some treatment that is being administered at the time. Nothing seems capable, however, of modifying the progress of the disease, which is very capricious. During a remission the number of red corpuscles increases. Sometimes the hemoglobin does not increase as fast and a disproportion between corpuscles and coloring matter occurs which gives the blood picture of chlorosis, that is of secondary anemia. It is well then to know the history of the case before venturing a diagnosis. When the red corpuscles increase in number the leucocytes do so also. This gives rise at times to a leucocytosis—a rare event. During remissions the red cells are often very large. In one case with 2,500,000 reds the patient was healthy and ruddy. His red blood cells contained double the normal amount of hemolobin, so that with only 50 per cent. of cells he had 100 per cent. of hemoglobin. In this case the red cells were so large that they resembled the blood corpuscles of some other species of animal. After some time of remission this case relapsed to a fatal termination.

Differential Diagnosis.—It is not so difficult as is often claimed to differentiate primary or pernicious from secondary anemia. The differential diagnostic points are, briefly, as follows: Pernicious anemia develops slowly, is painless and insidious, the patient's appearance of good health remains for a long time, symptoms referable to the spinal cord develop very frequently, there are paroxysmal attacks of gastric disturbance and there are marked remissions in symptoms which bear no relation to treatment. In secondary anemia a cause can be found; there is a steady progression as long as that cause acts; there are many small red corpuscles present; megaloblasts are much less numerous than in pernicious anemia and there is a disproportionate reduction in the hemoglobin.

Course of Pernicious Anemia.—The average duration of the disease is from one to two years. It may last with remissions for five years. Coma may develop, and yet the prognosis of approaching death is not justified. Dr. Cabot has had a patient recover from pernicious anemic coma to comparative good health. No patient in whom the diagnosis of the disease seemed justified has ever recovered.

Treatment.—No method of treatment seems to have any effect on the disease. Arsenic is useless, bone-marrow futile. Only laxatives seem to do any good. This would seem to confirm the theory that the disease is due to an intoxication and that some of the toxins may be eliminated by the intestinal mucous membrane. All the mild cases of the disease have diarrhea, and this also supports the theory mentioned.

Symptoms of Pernicious Anemia.—Dr. Frank Billings of Chicago discussed nineteen cases of pernicious anemia. Eleven were males, eight females. The average age was forty-six years. The average age in Byron Bramwell's cases was forty-five years—a practical agreement of statistics. In none of the cases was there any known cause for the anemia. In but one case had there been syphilis. There was not alcoholism, nervous shock, mental worry, nor overwork, physical or mental. The first and invariable symptom was the intense muscular weakness. This was practically always accompanied by dyspnea and palpitation of the heart. Diarrhea, as in Dr. Cabot's cases, was the rule. Nervous symptoms developed in one-third of the cases, and the first symptom was usually paresthesia of the legs. Headache was common; sleeplessness and restlessness frequent. It one case the first symptoms noted were due to the changes in the spinal cord.

The condition was diagnosed myelitis by one neurologist and neuritis by another. Paraplegia developed and the blood showed the characteristic picture of pernicious malaria. A very common symptom is the lemon-yellow color.

Blood Findings.—The number of red blood cells is sometimes very much reduced. In one case there were less than 200,000 to the cubic millimetre. The nucleated red corpuscles are not only of diagnostic but of prognostic importance. They usually become much more numerous shortly before death. On the other hand, just before a decided remission sets in there is a crisis in the nucleated red cells and they may even entirely disappear. This does not mean lasting cure, however. Relapses always occur. There are, perhaps, possibilities of cure in pernicious anemia, but there are no cases recorded, and the more the disease is studied, the more absolutely hopeless it seems.

Clinical Notes on Pernicious Anemia.—Dr. Frederick P. Henry of Philadelphia said that either pernicious anemia is not so frequent in Philadelphia as in Boston or else it goes unrecognized. He has not seen anything like the number of cases reported by Dr. Cabot, though he has been faithfully studying the disease since 1878. Five recent cases seem worth reporting for various reasons. One of the patients felt in very good health, with but 2,500,000 of red blood cells. It is probable in this case that the number of red cells natural to the individual was low and that 50 per cent. of the normal number was not so far away from the healthy condition as might be imagined. In one case a patient, discouraged by bad reports from the blood counts, refused to allow any more, though he adopted all measures of treatment advised. In one case Breckinridge's transfusion method was employed. Human blood was used for the purpose. It was kept fluid by the addition of 5 per cent. solution of phosphate of soda. Six ounces of blood were obtained from a negro who suffered from epilepsy. Ten days after the transfusion the pernicious anemia patient developed a conclusive attack, with spasms limited to the right side of the body. As he had never suffered from any convulsive seizures before, this occurrence created a great deal of comment because of the transfusion of blood from an epileptic. No improvement of the pernicious anemia followed the transfusion and further convulsions did not occur.

Treatment and Possibility of Cure.—There are certainly remedies that benefit the disease. Among these in the first place is arsenic, pushed to its physiological limit. In one case Dr. Henry has seen an absolute cure. The remedies employed were naphthalin, as an intestinal antiseptic, until it became too unpleasant to take from its persistent after taste. After this bismuth salicylate was employed and frequent minute doses of calomel. The appetite was practically nil and seemed to be greatly benefited by orexin. This did not prove similarly effective in other cases of the disease with this symptom of lack of appetite.

Special Peculiarities.—In two cases freckle-like spots developed on patients suffering from pernicious anemia. In one case this was accompanied by a universal bronzing. The disease has a tendency to be complicated by erysipelas and one of Dr. Henry's cases died from that affection. The diagnosis of secondary anemia due to gastric cancer is not difficult as the number of red blood cells is never as much reduced as it is in pernicious anemia. Dr. Henry has not seen less than 1,000,000 red blood cells in cancer cases.

Family Pernicious Anemia.—Dr. Kinnicutt of New York reported a fatal case of pernicious anemia in a child of seven years. The special interest of the case attaches to the fact that the sisters of the child, aged respectively fourteen and sixteen years also suffered from pernicious anemia although neither of them has died as yet.

Dr. Hobart Amory Hare said in discussion that pernicious anemia cases come oftener from the country than from the city. At Jefferson Hospital they come especially from the mining regions of Pennsylvania. Certainly the transfusion of blood cannot do any good in these cases since we know that the blood corpuscles of one animal will not live in another animal nor even those of one human being in another. Most of the benefit derived from such treatment is a mere coincidence.

Oral Suppuration.—Dr. Wm. H. Thomson of New York said that Hunter in his last 10 cases reports that in all of them there were suppurative processes in the gums and at the roots of the teeth. When the stomach was washed out it contained a notable number of streptococci. In the last case of pernicious anemia that came under Dr. Thomson's care the patient's mouth was carefully examined. No less than eight carious teeth were found and one tooth was pouring out pus. Hunter's theory is that in these cases the constant swallowing of purulent material leads to the production of a toxemia and in addition the presence of large numbers of micro-organisms of suppuration in the stomach disturbs digestion and nutrition. This idea of Hunter that the condition of the oral cavity may be an etiologic factor in the disease deserves further investigation.

Hypodermoclysis for Pernicious Anemia.—Dr. McPhredran of Toronto said that of 22 patients with pernicious anemia that he has seen 2 have recovered. He has used hypodermic injections of various sera, diphtheria serum when no other was at hand, and normal salt solution at times and has had excellent results in relieving severe symptoms. The average duration of weakness, tendency to coma and the like Dr. McPhedran thinks is larger than was said by the readers of the papers.

Dr. S. Weir Mitchell of Philadelphia said that all blood counts were relative, not absolute. Some years ago Dr. John K. Mitchell showed how much difference in successive blood counts was made by massage in the interval. Wherever the circu-

latory blood can be seen it will be noticed that clumps of cells remain for some time stationary at the divisions of blood vessels, and in small loops of the capillary circulation. These are turned into the circulation again by massage.

Dr. Stockton said that careful examination of the stomach contents of patients suffering from pernicious anemia showed that hydrochloric acid was absent in all cases. Before the fatal termination all digestive power ceased entirely and the condition known as achylia gastrica developed. This seemed to confirm the theory of the etiological importance of atrophy of the gastric tubules.

Dr. J. C. Da Costa of Philadelphia said that as to the length of remissions it did not seem to be affected much by conditions. In a clubman who was not a man of excesses but absolutely indolent the remission lasted eleven months; in a sailor who worked hard in the interval the remission lasted seven months. Dr. Da Costa has often seen high fever accompanying pernicious anemia and has even seen the disease mistaken for typhoid fever.

In closing the discussion Dr. Cabot said that on patients suffering from pernicious anemia massage has less influence in causing variations in the blood counts than it has in healthy people. This he knows by actual experiment. As to transfusion it is not only useless but dangerous. Franz Pfaff has shown recently that blood injections are especially liable to damage the kidneys.

Proliferation and Phagocytosis.—Dr. F. B. Mallory of Boston read a paper in which he showed that weak toxins in the circulation cause cells to take on proliferative conditions, while stronger toxins cause necrosis and exudation. He showed that phagocytosis, in addition to being protective, as in the destruction of bacteria, may be malignant when body cells consume others. He described the state of affairs in an active testicle removed from an old man of seventy years of age to relieve hypertrophy of the prostate. In the epididymus large phagocytes could be seen swallowing active spermatozoa.

The Strongylus Intestinalis.—Dr. W. S. Thayer of Johns Hopkins showed pictures of this rare parasite which was obtained from the stools of a young man who was never out of this country, spending most of his life at Richmond, Va. This is the second time this parasite has been seen in this country. The other case was a native of Austria. It is probable that the worm is commoner than is supposed. It is usually associated with the anchylostoma duodenale and when one is found the other should be sought. Whether the parasite causes diarrhea or not is a question. When first seen in cases from Cochin, China, and the St. Gotthard's tunnel, it seemed surely pathological, but this is now doubted. The question is worthy of further investigation.

(To be Continued.)

The State Forests Increased.—The New York State Forest Preserve Board has decided to purchase a tract of 300 acres of forest land.

AMERICAN PEDIATRIC SOCIETY.

Twelfth Annual Meeting, Held at Washington, D. C., May 1, 2, and 3, 1900.

FIRST DAY—MAY 1ST.

President's Address.—Dr. Henry Koplik, of New York, read the annual address, entitled "The Ambulatory and Hospital Management of the Gastro-Intestinal Derangements of Infancy During the Summer Months among the Poor of Large Cities." He held that the breast-fed infant is not exposed to as great or as many sources of infection as the artificially-fed infant. In the latter, cow's milk is the substitute for the breast by common consent of all practical men. Yet before it reaches the infant, it passes through so many channels and is exposed to so many chances of infection that the wonder is the mortality is not larger than it really is. Milk, above all articles of diet, attracts to itself infection, even if such infection is not directly introduced into the milk. The animals from whom the milk is obtained can first introduce infection, and in saying this Dr. Koplik did not refer to tuberculosis, but to filth. The udder of the animal may be the means of introducing into the milk streptococci, which can cause virulent forms of diarrhea. Dairy dirt also may be introduced into the milk during milking. Again, in passing from utensil to utensil in commerce, the milk is exposed to a thousand and one sources of infection. Practical men will agree that cleanliness is the light that has penetrated the dark and baffling problem of infant-feeding. The foundation of all artificial feeding must necessarily be the breast-feeding; and yet, in this natural method, the greatest diversity is found in the quantity and quality of the food, tending to give equally brilliant results. In a limited number of studies on breast-fed infants, the result tends to show that the quantities vary; that one infant will take eighty-nine caloric equivalents daily, while another will take 126 caloric equivalents, and yet both infants will be equally well nourished. The fat varies largely in the same milk and in the milk of various breasts, and yet the children of each breast thrive. In cow's milk, the problem is a more difficult one. The milk must not only be diluted, but the waste of the proteid constituents of the milk is large even in thriving infants. The increase in the phosphorus in the excreta indicates this. It is not sufficient, therefore, to simply construct the infant's milk of the breast proportions, but the waste and the necessity of dilution must be taken into account. The keynote of Dr. Koplik's theme was that the gastro-intestinal diseases, both mild and severe, are, in the vast number of cases, infectious.

Intestinal Obstruction.—Dr. Irving M. Snow of Buffalo, N. Y., presented a specimen in which Meckel's diverticulum measured twelve inches, the portion constricted being the last foot of the ileum. The patient was a boy, three years of age,

and in good health up to the present illness. The history of the case is that he fell a short distance from some steps, striking on the abdomen to the right of the navel. Not any bad effects followed this accident; in fact, there was complete relief in an hour. A day or so later the child ate freely of grapes, and there was reason to believe that this dietetic indiscretion, by producing intestinal irritation and increased peristalsis, was the exciting cause of the obstruction. Three days after the accident the boy had a normal fecal passage, but commenced vomiting and vomited persistently for four days. Laxatives and enemata failed to move the bowels, which were obstinately constipated during five days. There was also agonizing and nearly continuous abdominal pain, so intense as to require opiates. There was not any tenderness, induration or abdominal tumor to be felt. The belly was slightly distended and there was some gurgling and rumbling on palpation. The temperature was slightly above normal, and, as a matter of fact, the illness ran its entire course without fever. After an illness of twelve days the patient died. The post-mortem showed that the cause of death was due to exhaustion and inanition from pain, vomiting, and interruption of assimilation from an unrecognized abdominal obstruction. The condition was not recognized as intestinal obstruction, and not being relieved by operative treatment ended in death.

Dr. Augustus Caillé of New York reported a case in which the symptoms of obstruction were present, but the obstruction was not complete. It was his conclusion that in such instances exploratory laparotomy should be done on the first occasion of fecal vomiting. The case reported resulted in death, but the patient might have been saved by prompt surgical interference, as suggested.

Dr. Samuel S. Adams of Washington reported a case that was not operated on until the symptoms became alarming. While the patient was being placed under anesthesia there was a free movement of the bowels, but on opening the abdomen the invagination was found to be undisturbed. The patient recovered.

Dr. W. S. Christopher referred to a case where air was injected into the intestines after the abdomen was opened, and it was his opinion that sufficient pressure could have been exerted to burst the intestines without loosening the intussusception. This case was of especial interest inasmuch as it was the second time intussusception had occurred in the same patient and been treated by Dr. Christopher. The patient recovered from the second attack.

In closing the discussion Dr. Snow said it was extremely difficult to make a diagnosis in cases where the symptoms are obscure. It was his opinion that an exploratory incision should be made if there be even a doubt as to the diagnosis.

Pancreatic Digestion of Caseine.—In the experiments set forth in this paper Dr. B. K. Rachford of Cincinnati, O., used rabbits' pancreatic juice, which was collected in a common receptacle and afterward equally divided between the digestion tubes of an experiment, so that each tube might contain an equal quantity of pancreatic juice of like digestive capacity. The bile was also obtained from the rabbit, and filtered before using. Ordinary dairy milk was employed which had been boiled and neutralized. He observed at the close of certain experiments that free fat or butter was found floating on the surface of digestive mixtures in which the milk had been subjected to the action of both bile and pancreatic juice. The physiological emulsion of fats, as it occurs in milk, was partially destroyed by the combined action of bile and pancreatic juice, but this emulsion was not destroyed by either one of these agents when acting alone. This led to the observation that possibly the emulsion of fats in milk is wholly or partially destroyed by the action of bile and pancreatic juice in the intestinal canal prior to their absorption.

Dr. Augustus Caillé, in discussion, approved of hydrochloric acid to assist digestion in children from one to two years of age.

Dr. L. E. Holt of New York said he did not believe in giving hydrochloric acid to babies. He thought the best way was to pay attention exclusively to the diet.

Dr. A. D. Blackader agreed with Dr. Holt that the diet was of paramount importance.

Dr. T. M. Rotch of Boston did not think that farinaceous matter assisted digestion as much as lime-water, and, therefore, there might be some objection to the former. He preferred giving lime-water.

Dr. Rachford, in closing the discussion, said that his paper was not intended for a clinical paper. His object was to determine how babies should be treated; how these investigations are to be followed would have to be determined afterward. There were two things to be considered, he said. One was whether hydrochloric acid did cause a larger amount of caseine to be digested by the pancreatic juice, and the other was whether in examining the stomach hydrochloric acid was found to be deficient.

Operative Treatment of Tuberculous Peritonitis.—Dr. Augustus Caillé presented this paper and stated that the cases related were carefully studied by him before operation and had been under observation for two or three years after operation, so that he had a clear insight as far as the beneficial effects of the operation were concerned. A number of cases were reported, including one in which a diagnosis of tuberculous peritonitis was made by exclusion and in which tuberculosis of the hernial sac was discovered during a Bassini operation for the cure of the hernia, which operation also affected a cure of the tuberculous peritonitis, although the abdomen was not encroached upon.

Another interesting group of cases presented solid tuberculous tumors of the peritoneum and mesentery, two of which Dr. Caillé had observed himself. They presented a distinct variety apart

from the other well-known forms of tuberculous peritonitis. A particularly interesting case was one in which the diagnosis was made quite early, but operative interference was refused, and for the greater part of two years all known methods of medication, internal and external, were persisted in without any apparent benefit.

From a study of the cases presented, Dr. Caillé's conclusion was that medication is futile as far as cure is concerned. The diagnosis is made by exclusion, except where the tubercle bacillus is found in the puncture fluids, when a diagnosis is positive. In all doubtful cases an exploratory laparotomy is imperatively indicated because surgical interference can only effect a cure in cases that are recognized very early and are not complicated by tuberculosis of other parts. The main diagnostic features are the abdominal symptoms, pain, distention, disturbed bowel action, effusion, and in every case carefully observed by Dr. Caillé there was a low, irregular tumor. It was not characteristic in itself, but was present in every case observed.

Dr. J. Henry Fruitnight of New York said he had obtained good results in the Children's Hospital following an operation in a number of cases of tuberculous peritonitis, but he did not believe that the recovery in such cases could be considered permanent.

Dr. Rotch, referring to some two hundred autopsies in fatal cases of diphtheria in infants and young children, in which there were seventeen cases of tuberculosis in some part of the body, emphasized the importance of diagnosis between primary and secondary peritonitis. The treatment of tuberculous peritonitis, which is secondary to disease of the lungs, is almost useless. When the disease is primary, laparotomy gives good results. He stated that many cases of peritonitis, with or without effusion, are tuberculous even when the tuberculosis may not be demonstrated. He reported a case in which an enlarged mesenteric gland was removed, and dwelt on the importance of the early removal of such glands whenever they are tuberculous, in order to prevent the further spread of infection. The use of tuberculin in diagnosis was considered by him very important, especially in cases where there is a low range of temperature, because where the temperature is 102° or 103° F. the result is not so favorable for its use.

Dr. A. C. Cotton of Chicago stated that in the absence of positive clinical evidence he was often driven to bacteriologic findings to decide the diagnosis in suspicious cases of tuberculous peritonitis. He raised the question as to how far practitioners are justified in doing exploratory laparotomy in such cases.

Dr. Rotch replied that he did not see why exploratory laparotomy should not be done in all cases.

Dr. Jackson laid stress on the examination of the blood for leucocytosis, although such examination would not differentiate the disease from typhoid fever.

Dr. Koplik called attention to sarcoma, which it is important to differentiate from tuberculous masses in cases of peritonitis.

Dr. Caillé, in closing the discussion, considered medicinal treatment in these cases of no avail, and stated that it was not worth while to waste time on guaiacol and creosote. The diagnosis, he said, is frequently not made positively because tuberculosis cannot be found. If the disease is suspected, then it is an absolute duty to open the abdomen. Fluid in the abdomen may be due to a chronic malarial infection or a large spleen or sarcosis, anemia, nephritis, or to valvular disease of the heart. It was his opinion that if the diagnosis could not be made otherwise the opening of the abdomen is harmless. The patient, being under an anesthetic, does not suffer pain, and it was Dr. Caillé's belief that a physician would be derelict in duty if he did not advise laparotomy in suspected cases in which the diagnosis is not absolute. He did not lay very much stress on the examination of the blood, as such an examination would not differentiate cases of tuberculous peritonitis, and every case of infection caused by chronic malaria or anemia, although he admitted that such an examination might sometimes aid in the diagnosis.

Studies on the Blood in Childhood.——In the absence of Dr. Alfred Stengel and Dr. C. Y. White of Philadelphia their joint paper on the above subject was read by title.

SECOND DAY—MAY 2D.

The Treatment of Hydrocephalus by Craniectomy.—Dr. Edward P. Davis of Philadelphia, in his paper on the above subject, referred to the case of an infant six months old. The mother of this infant had two other children. Before the birth of this child the mother was in excellent health. The birth was spontaneous. The mother nursed the child for three weeks, when she had what was described as a "bilious attack," and the secretion of milk failed. The child was then fed on starchy food. The child weighed at birth five and one-half pounds, and at six months nine pounds. It was brought for treatment because it was restless and had a poor appetite and did not seem to be gaining. It was decidedly stupid and evidently suffered from intra-cranial pressure. The child was transferred to the Jefferson Hospital, where it was seen by Dr. W. W. Keen in consultation. An effort was made to secure continuous drainage, but it did not seem to withdraw the fluid from the ventricles. The child was anesthetized and under antiseptic precautions the cranium was trephined at one side of a sagittal suture and in the parietal bone on the right side. Dr. Davis thoroughly described the subsequent operations and results and stated that the child finally collapsed and died.

Dr. Rotch, in discussion, referred to a case in the Infants' Hospital in Boston, and said that so far as the operation is concerned, it seems to be very simple and no bad results come from the

operation as such. They were either treated with one tapping or, as in some other cases, they were kept for perhaps weeks with frequent drainage with tubes introduced into the ventricle, and the fluid withdrawn every day. The results were invariably bad so that the opinion in Boston now is, from what has been observed, that the operation is in no way curative. It may perhaps be palliative, making the child more comfortable for the time being.

Dr. Dorning reported a case where two ounces of fluid was withdrawn; after the puncture the child became very quiet, convulsions ceased and the child seemed to improve for about three weeks, but after that, unfortunately, he lost track of the case.

Dr. Koplik reported three interesting cases that came under his observation. In one case which he had seen lately, a baby, seven months old, developed symptoms very much like those in tuberculous syphilis. The child was tapped in the lumbar space and each time ten to twenty c.c., varying according to the indications, was taken. The baby seemed to improve after each tapping, the convulsions ceasing. After tapping the child six or seven times during the week, the results appeared to be good. By tapping the amount of fluid in the ventricle was reduced; it was not intended to take off all at once. The relief by pressure probably precipitated the result. It was a straightforward clinical case of chronic hydrocephalus.

Dr. Rotch stated that in a case he had operated on in the Infants' Hospital, the greatest care was taken to keep a record of the amount of pressure under which the fluid was withdrawn and the amount during the whole sickness until the child died. It was quite an interesting experiment but he did not think it would lead to anything clinically. It impressed him as being a palliative treatment.

Dr. Davis, in closing the discussion, said that the danger of immediate death seemed to depend very largely in this case upon the amount of fluid withdrawn, and hence the operator should be solicitous as to the minimum of fluid which should escape. Hence, the effort to maintain pressure while the drainage is being inserted.

The Nephritis of Influenza in Children.—Dr. Rowland G. Freeman of New York in presenting his paper, cited a case of a boy, four years of age, who, for the past three years, suffered each winter from an attack of influenza. The present attack began the first of January, 1899, with the ordinary symptoms of cold—prostration, fever, and moderate earache, but at no time was there any discharge from the ear. January 31st he had a temperature of 102.5° F., the highest temperature being 105° F. on February 5th. The temperature gradually diminished. February 9th it varied between 100° F. and 101° F. On this date the child passed some very red urine, which contained a considerable amount of blood, about 5 per cent. by bulk. His conclusions were that, although albumin is fairly frequent, the influenza of nephritis is a rare complication. The nephritis complicated in influenza is usually clinical, of an acute hemorrhagic type, and morphologically shows toxin lesions. It apparently attacks children more often than adults. Any disturbance may appear a few days after the acute symptoms of influenza or as long as a month later. He added that the prognosis is fairly good.

Dr. Fruitnight said, in discussion, that in fifty-seven cases he had found but one case of albumin which disappeared in a few days. It was a very rare complication.

Dr. Dorning thought more care should be exercised in examining children. He reported three cases of complicated nephritis. The entire family had suffered from influenza and no attention was given to the urine until one child, nine years of age, had shown some edema of the face. An examination of the urine showed 30 per cent. of albumin and a large number of blood-casts. This ran for three weeks before the casts in the albumin entirely disappeared. Another child, four years old, showed edema of the face. In this child's urine blood-casts were found. These conditions cleared up and the children recovered. Another case of a child, four years old, was reported in which influenza affected every member of the family, and showed a very pronounced form of nephritis. The mother brought the child to the speaker's office, stating that his face had become swollen and that the swelling had disappeared some four days previously. On examination the urine showed blood-casts and 50 per cent. of albumin. There was a loss of appetite. The urine is not yet cleared up, but the edema disappeared in three weeks.

Dr. Jennings reported one case of nephritis following a double infection. The influenza appeared first and was followed by nephritis. So far as his observation goes nephritis is equally as rare as a complication of measles. This case of nephritis was of a mild character. The urinary findings amounted to sixteen ounces, and the specific gravity 1015. There was an abundant precipitation of albumin, and also blood-casts. The urine cleared up in a very short time and the blood-casts disappeared on the third day. The granular casts persisted in a few numbers for perhaps a week. The urine increased to twenty ounces on the third day; twenty-eight on the fifth day, and after that the child was practically convalescent.

Dr. Rotch said it would be very interesting to see a post-mortem of a case following influenza. The probability is that these cases of nephritis and influenza are of an acute interstitial type following the general rule of an infectious disease. It is important to make a diagnosis of any special form of renal disease in young children by means of an examination of the urine; that is, if the rule is followed which is usual in making a diagnosis in adult cases.

Dr. Carr said that the clinical phenomena are very much the same as those reported by Dr. Freeman—temperature-range and other condi-

tions. In a case reported by him a very striking feature was the suddenly developed taste of the child for sugar. It would not take any medicine unless it was sweetened. The case was of interest to him because of a sudden increase in the specific gravity, this fondness of this child for sugar, and the absence of albumin.

Dr. Churchill said he would like to raise a question in these cases of influenza, and also other infectious diseases, whether they are not often the beginning of inward trouble which develop later on in life, particularly at puberty or still later, and whether we do not find manifestations of inward trouble by careful and thorough examination of the urine. Evidence was found of what might be called renal irritation after the actual nephritis. He reported a case of a young man nineteen years of age, suffering from an attack of appendicitis. He examined the urine simply as a routine practice and found chronic nephritis. It is his opinion that there is no way of determining the standpoint of the nephritis.

Dr. Caillé was astonished at the recuperative power in children. He has seen many desperate cases of nephritis cleared up in time completely.

Dr. Freeman, in closing the discussion, stated that the examination of this child's kidneys had been made more than a year ago, and during all this time the kidneys remained perfectly healthy, and he never had any deviation from the normal. Concerning the ear as a factor in this matter, there was at no time any otitis. During the month of January and the month preceding this attack the child complained at times of pain in his ear, but it passed off in a few hours, and there would be nothing more of it, perhaps, for a week. There was never any special tenderness about the ear, except for an hour or two. These cases are the result of a fairly exhaustive search through the literature of the past ten years, and he hoped by calling attention to this matter that there might be some interesting points made.

Bursting of Caseous Gland into the Trachea.—Dr. Augustus Caillé of New York presented a specimen taken from the body of a girl. The autopsy revealed a cold abscess about the size of a walnut, a little above the bifurcation of the trachea. The contents were cheesy matter. It had ruptured into the trachea and the cheesy matter from the abscess had completely flooded the trachea.

In response to inquiries, Dr. Caillé said that the child had been sent into the hospital with a diagnosis of bronchitis. The house-physician, in going over the child, heard a few râles beneath the sternum. The patient had no fever, no pain, and hardly any cough, but was playful and in apparently good health and was not put to bed at all.

Dr. Rotch, in discussion, called attention to the fact that many children are tubercular when there is no suspicion that tuberculosis existed. It was his opinion that in almost every case when a child has a cough, his health must be guarded. The case in question showed no evidence of tuberculosis.

Dr. Dorning stated that he had resorted in a great many cases to elevating the face, which tended to draw the trachea upward. And in only one case was he able to get a murmur. He was unable to say whether there was a large gland there or not, as the case passed from his observation and had no value from that standpoint.

Dr. Miller said that he had tried in a large number of cases the experiment referred to by Dr. Dorning, and it seemed to him that the murmur produced by tossing the head back and putting the face on a level plane is present in many normal cases.

Dr. West reported a case where the symptoms spoken of by Dr. Dorning were very prominent. He also referred to other cases where the symptoms were very prominent, and in one case that he had attended, the symptoms disappeared and then reappeared. In the case he saw last winter the child had a cough that resembled, to some extent, whooping-cough, and in another case he cited there was also resemblance to whooping-cough.

Endocarditis and Anuria.—Dr. A. C. Cotton, of Chicago, reported the case of a baby born March 19, 1900. The family history was negative, there being no history of syphilis obtainable. The mother was a primipara and had been well during gestation. She had never suffered from rheumatism. Labor normal. It was a well-developed child, presenting no external malformations. Meconium was passed shortly after birth. The child had a marked pallor which persisted, changing to a greenish hue, actual cyanosis supervening gradually. Examination of the heart showed a loud, harsh, diastolic murmur. It was heard all over the chest. It was hard to locate the exact position of this murmur. The child died of progressive asthenia on the fifth day, no urine having been secreted.

Dr. Samuel S. Adams, in discussion, stated that the question of anuria—the relation between the cardiac lesion as described and the anuria—does not mean that one is responsible for the other.

Enteric Fever in Childhood.—Dr. A. D. Blackader of Montreal in presenting his paper, referred to the outbreak of typhoid fever in Montreal which was due, in two instances, to the infection being conveyed in milk. He had made notes of twenty-nine cases of typhoid fever in his own practice, and had examined the records of forty-eight cases in the Montreal General Hospital and twenty-three cases admitted into the Royal Victoria Hospital. He treated of all the characteristics of the disease as manifested in these cases with the relative frequency of the various symptoms and the results obtained by treatment. His conclusions were the efficacy of the cold baths and the Brand method in the treatment of typhoid fever in children, and laid stress on the great value of the regular and systematic employment of the cool or cold bath in the treatment of this affection. It might be employed regularly without too rigid adherence to the rule of Brand of only using it when the fever reaches 102.2° F.

He pointed out that the baths are not to be employed for its effect on the temperature so much as for its effect on the nervous system and through it, on the heart, respiration and secretion—especially secretion from the kidneys.

Dr. A. C. Cotton, in discussion, said that the matter of interest to him was to note the effect of the free movement of the bowels against constipation.

Dr. W. P. Northrup was of the opinion that children under two years of age are little susceptible to the invasion of typhoid fever. He reported the case of a child 9 months of age, which was the sixth case of typhoid fever in the same family. This infant was put to bed with a typhoid patient, the mother being the only well one to take care of the family. He cited another case of a child thirteen months old who was fed by its father from the same cup he used himself. He said that one of his patients craved ice cream and when it was ordered, he found it to be largely composed of corn-starch.

Dr. Griffith stated that typhoid fever is a frequent occurrence in infancy under the age of one or two years, and the symptoms were difficult to recognize on account of the youth of the patient. He thought rose spots should be looked after more carefully. He referred to the numerous cases of typhoid fever in Philadelphia, where he had considerable experience both in hospital and outside practice. He stated that he had repeatedly given up first tubbing and then sponging, as he found the children grew blue and that the pulse became weak, and that the tendency was to make them worse instead of better. Children do not bear water as well as adults.

Dr. Rotch stated that the symptoms of typhoid fever do not appear in early life so well as in later years. He thought that the cases indicated by Dr. Northrup showed severe symptoms. They were not common symptoms. Out of hundreds of cases in the Children's Hospital, only the very severe ones die; as a rule, they are exceedingly mild in early childhood. The lesions are not pronounced at the autopsy. The rose spots, he thought, would be found more common than usually supposed.

Dr. Wilson said that he entirely concurred in what Dr. Northrup had said with regard to infancy, carrying with it up to a period of two years a certain degree of immunity as compared with the next period from two to ten years and ten to fifteen years—the degree of immunity as compared with adult life.

Dr. Dorning said that in the use of water he thought there was room for great discernment. He is impressed with hydrotherapy and its value and also with its potency for harm. To get the benefit of both it is necessary to get reaction. If the flush becomes blue, it is doing harm. He did not believe that babies stand tubbing well. He said a baby could not be put into a bath of 68° F. with a temperature of 105.

Dr. Northrup referred to two thousand autopsies on children under two years of age, and in none had he seen typhoid fever. Eleven hundred of these children were fed on "corner-grocery" milk. He does not believe a child one or two years of age is susceptible to typhoid fever but he thinks that if they do get typhoid fever, they declare it.

(To be Continued.)

AMERICAN GYNECOLOGICAL SOCIETY.

Twenty-fifth Annual Meeting, Held at Washington, D. C., May 1, 2 and 3, 1900.

FIRST DAY—MAY 1ST.

The twenty-fifth annual meeting of the American Gynecological Society was called to order by the President, Dr. George T. Engelmann of Boston.

The Address of Welcome was delivered by Dr. Joseph Taber Johnson of Washington. He said that he had the honor of extending a hearty welcome to the members of the Society from all the members of the profession residing in Washington. He bade them welcome to all the public buildings, and urged them to stay as long as possible. This Society, which began in a very modest way one-quarter of a century ago, is the parent society of all the obstetrical and gynecological societies which are found in the larger cities, and it has a fine record of usefulness. It has done much to further original work and advanced study, and it has seen many changes in its life, among the most notable of which has been the reduction of the mortality of childbirth to the small figure of one-quarter of one per cent. Dr. Johnson then closed his remarks by reiterating a most cordial welcome.

Operation for Primary Vaginal Carcinoma.—Dr. William R. Pryor of New York read a paper on this subject. He said Freidl, in 1896, collected the statistics of only 130 cases of primary cancer of the vagina. In 1892-1893, out of 5341 gynecological cases treated in the Vienna Institution, there were only 15 cases of primary cancer of the vagina, or .22 per cent. Martin found only 4 cases in 5000 women that he examined. Vauvra of Prague collected the statistics of 8981 cases of cancer in women, and of these only 38 cases were primary in the vagina. Beigel found that in 8287 women who had died from cancer in only 14 had the cancer been primarily in the vagina, while in Myers' 266 cases of cancer in women 8 affected the vagina. In Vienna, cancer of the vagina occurs once while cancer of the uterus is found 68 times. The Prague ratio is 1 to 38. The primary cancer of the vagina usually affects the posterior wall, and it may extend back to the rectum, upward to the uterus, or involve other portions of the vagina. In the 18 cases reported by Olshausen in 13 the involvement was in the posterior wall. In both of the two cases reported by the author the growth recurred in the pelvis, involving the bowel secondarily. Olshausen's operation is generally the

method of procedure. This has been modified by different surgeons, especially by Mackenrodt. The operation consists in a blunt dissection of the vagina from the rectum, which Mackenrodt modified by using the actual cautery at the end of the dissection. The result of this operation has not been gratifying, for 90 per cent. of the cases had a recurrence at the site of operation inside of one year. This is probably due to either some of the cancerous tissue being left behind, or else leaving tissue of low vitality, which soon underwent cancerous infection, or, lastly, the germ of cancer may have become implanted on the raw surfaces of previously healthy tissue at the time of operation. The author has devised an operation which has none of the objectionable features of Olshausen's operation and at the same time has more advantages. The technic consists in the preparation of the patient in the usual manner; an incision is made in the abdomen, in the middle line from the umbilicus to the pubes. The ovarian vessels are then ligated over the pelvic brim. The round ligaments are tied off close to the brim of the pelvis and the broad ligaments split down to the level of the uterovesical fold. As the folds separate the iliac vessels and ureter come into view and the latter is then freed from the iliac artery, and held to one side by an assistant. The internal iliac artery is then tied with kangaroo tendon. An incision is now made into the vagina, anterior to the cervix, and four silk sutures are passed through the intestine at the approximation of this incision, care being taken not to make too much tension. The sutures then enter on the vaginal face of the bladder, emerge on the peritoneal face, and are tied. The distribution of the internal iliac artery is then dissected out and the obturator branch is tied so as to prevent anastomosis with the deep epigastric artery. The abdominal wound is then closed, and the patient put in the lithotomy position. Any cancerous masses are then curetted and burned deeply with the actual cautery. The vulva and vagina are then circled with an incision, which leaves the anterior vaginal wall. A blunt dissection, which removes the posterior wall of the vagina and the perirectal tissue, is then made with scissors. The levator ani muscle is divided, and also some fibers of the gluteus maximus, and the dissection is carried up to the point where the sutures are in the bowel. The wound is then sutured, leaving a small opening to act as an artificial anus. The author's two cases had good control of all but very liquid feces. The great point in this operation is to be sure to remove all of the diseased tissue. The operation has a sound anatomical basis, and its surgical basis is as follows: (1) Prevention of hemorrhage. (2) Avoidance of injury to the cancerous field until it has been cauterized and its blood-supply cut off. (3) Removal of all organs in which there is liability of recurrence. (4) The establishing of an artificial anus near the site of the normal outlet. Both of the author's cases lived for a little over a year.

Dr. Mundé of New York opened the discussion by saying that he had seen two cases of carcinoma of the vagina in which the rectum was badly involved as well. The disease area was so great that extirpation was impossible, so he curetted thoroughly and followed this by cauterizing with the actual cautery. Both of these patients lived for two years, and there was a very marked amelioration in their symptoms. He is opposed to such radical operative measures as Dr. Pryor has proposed, for the reason that they do not seem to prolong life to an appreciable extent and are, therefore, useless.

Dr. Sutton of Pittsburg said that he has but little faith in operative interference in advanced cases. It would seem to be better if we should study the pathology of cancer, especially in relation to its etiology and not to try to make any further advance in operative procedure. After its etiology has been determined its cure will become a much more simple problem.

Dr. Van den Warker of Syracuse said he felt very strongly on this subject, as his home was in the "Cancer Belt," and his experience had been that all operative measures are of very little value, especially the old method with the clamp, which in his hands had proven to be an absolute failure.

Dr. Montgomery of Philadelphia said his experience is that recurrence occurs so often, and usually so soon after the operation, that he thought it was very questionable if it was wise to operate at all. There is absolutely no plan of operative procedure which insures against recurrence, for there may be nests of cancerous tissue well above the seat of operation, and these will develop at a future date. We are at present in an experimental stage and it is not possible to predict results in advance.

Dr. Byrne of Brooklyn said that his experience had taught him that there is but very little use in attempting to remove a cancerous uterus, as recurrence nearly always took place, and the patient's life was not prolonged by the operative interference.

Dr. Reamy of Cincinnati said that he believed operations for the removal of cancer to be of the utmost value. In his practice he had had six women who had lived long after an amputation of the cervix for cancer, one of them enjoying good health for twenty years subsequent to the operation. In the larger percentage of cases the cancer cannot be cured on account of the extensive lymphatic involvement. In the bad cases it is usually best not to operate, as the patient will usually live longer without operative interference.

Dr. Dudley of New York said he had seen several cases of primary vaginal cancer and that in these cases the recurrence is sooner than when the other pelvic organs are the seat of the disease. He considered Dr. Pryor's operation to be a very good one in every way.

Dr. Pryor closed the discussion by saying that it would be only a few years before the etiology of cancer would be definitely determined and then its treatment would be much simplified.

Each case should be decided on its merits, and if an operation be indicated, it should be performed no matter what the influence might be on the friends of the patient. Either operate and go wide of the disease, thus removing it all, or else do not operate. Anything less than a radical operation does more harm than good.

Fecal Fistulæ.—Dr. I. S. Stone of Washington read a paper on this subject. He said the condition is one of the most distressing and annoying of post-operative sequelæ. These fistulæ usually heal spontaneously; if they do not it is because of some definite cause which keeps them open, such as extensive peritoneal adhesions or tubercular infection. Peristalsis that is reversed or is interfered with is another frequent cause of non-healing. Among the operations available for the treatment of a fecal fistula may be mentioned (1) freshening the edges and closure by suture; (2) resection of the gut and either lateral or end-to-end anastomosis with the Murphy button; (3) Greig Smith's operation or cutting down on either side of the fistula to the peritoneum without opening it; then dissecting two inches of this away from the abdominal wall on each side or around the fistula as a centre; then withdraw the peritoneum with attached and adherent bowel far enough to easily close the fistula; (4) and the method of the author, which is as follows: An incision is made in the vagina, as for vaginal hysterectomy; the fistulous tract is then opened and a rubber tube introduced through the vaginal opening into the rectum and secured in place by suture into the wound. This tube allows the escape of all gases and some thin fecal matter during the two weeks it is kept in position. After this time the sinus is washed out daily with weak formalin solution and, finally, the tract closes permanently. He has done this operation twice and in each of the two cases with the most gratifying results.

The following conclusions were drawn: (1) In all resistant fistulæ we must for obvious reasons remove any foreign body that may be present. (2) All attempts at skin closure or by cauterization or curettement of persistent fecal fistulæ are generally unsuccessful. (3) In all cases where a fistula connects with a superficial coil of intestine the method of Greig Smith may be tried before resorting to a radical operation. (4) In the deep-seated fistulæ requiring abdominal section, we must choose between excision and some form of anastomosis, for we will rarely find the case so simple as to permit of inversion of the fistulous portion and direct suture. (5) In operating for such deep-seated fistulæ we must not fail to liberate imprisoned bowel and restore the normal peristalsis, permitting free motion of intestinal coils, and direct the fecal current in its proper course. (6) Finally, in a recto-abdominal fistula we should if possible convert the same into a rectovaginal fistula and secure closure of the tract before the temporary fistula is allowed to close.

Dr. Johnstone of Cincinnati opened the discussion and said that as a matter of justice to two dead men he would state that the method outlined by Dr. Stone was taught by Lawson Tait to Greig Smith. The speaker said that he assisted Mr. Tait the first time he closed a fistula in that way, and it was his (Dr. Johnstone's) seventeenth operation. Ever since 1886 he has used this method in closing every form of fistula and in one case succeeded on the third operation in closing a ureteral fistula.

Dr. Smith of Montreal said that the injection of methylene blue solution was often of great help in determining the exact course of a fistulous tract and he cited a case in which this was clearly shown. Dr. Noble of Philadelphia said that he had seen many cases of fistula all but four of which had closed spontaneously. One of these four is now healing up while the other three are tubercular in origin. In these cases the prognosis is bad, whether operation be performed or not. It is a good general rule to wait a long while before considering operative interference, for in the majority of uncomplicated cases nature will eventually effect a cure.

Dr. Dudley of New York said that clean surgery did not always prevent fistulæ, for traumatism was often an important etiological factor. In small fistulæ it is well to wait for spontaneous closure which often takes place, but in those cases where the fistula is large operation is clearly indicated. Resection and anastomosis with the Murphy button is a very good way and in his hands has proven very successful. The fistulæ of the large intestine are more apt to heal spontaneously, but large fistulæ of the abdominal wall and either the large or small intestine nearly always require operative interference for their relief.

Dr. Mann of Buffalo said that the fistulæ of the large intestine usually heal spontaneously, while those of the small intestine must be operated upon. The further up the large intestine, or in other words the nearer to the stomach, the more difficult becomes the task of securing healing. Often a small fistula can be closed by freshening the edges and approximating them with sutures, but this is not possible when the fistula is a large one. In these cases the only thing to do is to resect the gut and do an end-to-end anastomosis. Occasionally a plastic operation on the abdominal wall will result in curing a small fistula. It is especially applicable in those cases not due to the presence of some foreign body.

Dr. Stone closed the discussion by saying that he thought the members of the society were agreed as to the danger of opening the abdomen in conditions of this sort, and this should only be done after every superficial method has been employed. The deeper fistulæ along the sigmoid and the rectum are those which give the most trouble. In regard to the claim of priority made for Lawson Tait and Greig Smith in the method pursued, the speaker said he had no idea that Mr. Tait claimed this procedure.

(To be Continued.)

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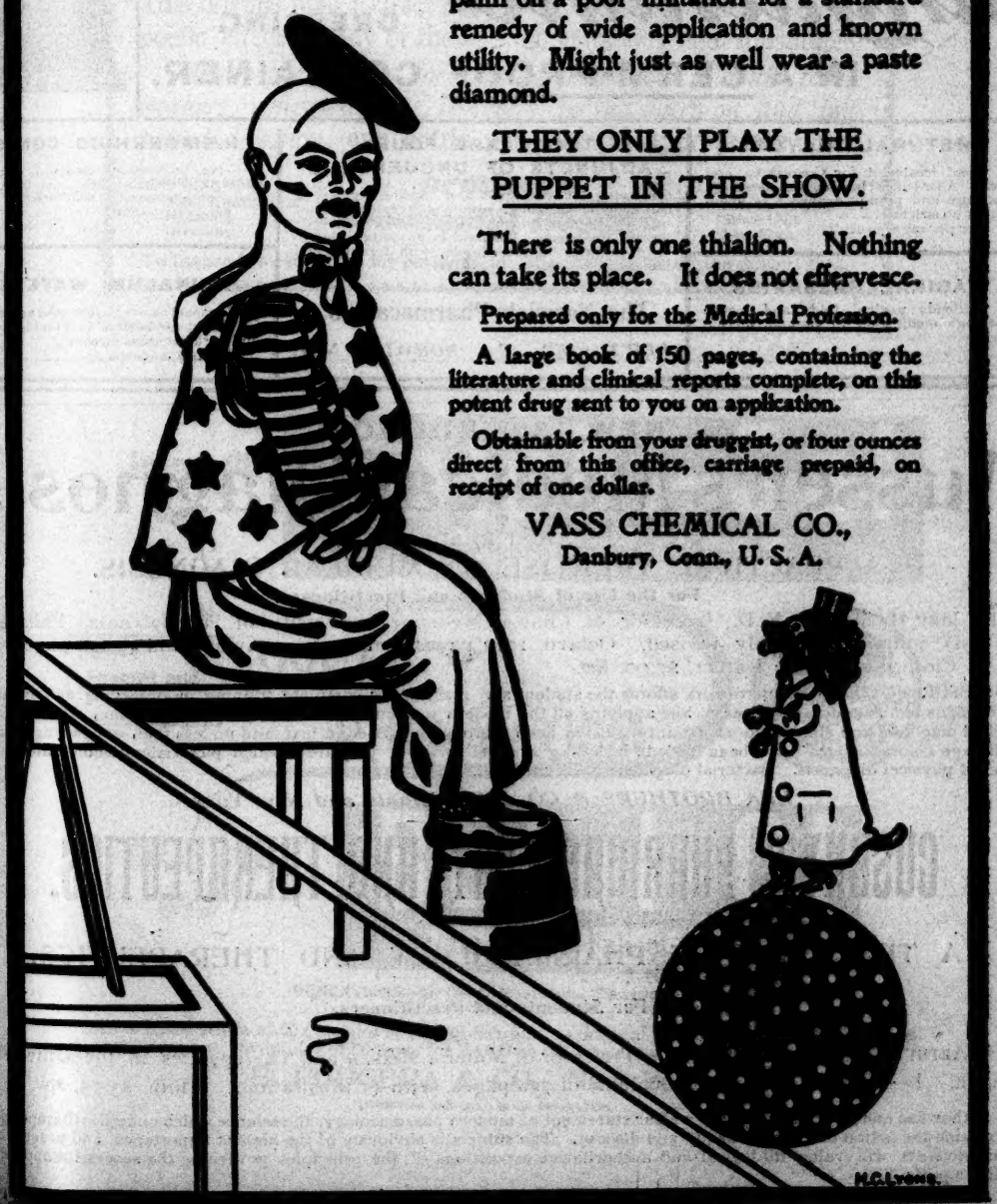

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Respiratory Lesions of the Grip.

The most serious complications of the grip are the bronchial and pulmonary inflammations. They are far more serious and fatal when complicated with this disease or immediately following it than under other conditions.

The reason for this is that the patient's vitality is so reduced by the principal disease that he is not able to resist the inflammatory process of pneumonia or bronchitis, or to throw off the exudates. Thus a localized pulmonary lesion, which he would ordinarily be able to control, is, on account of his feeble vitality, allowed to extend, or the tissues break down, forming an abscess, in either case frequently with fatal termination.

The most important indication for treatment in such cases is to sustain the vitality of the patient, whatever else is done to relieve the immediate and variable symptoms. The chemically pure hypophosphites of lime and soda will be found to be the very best agent for this purpose. It stimulates the rapid renewal of the wornout tissue cells, giving vigor and resisting-power to the system. This it does, not by whipping up the tired nerves, but by nourishing them.

It is of the utmost importance that this remedy should be obtained in its pure form. The salts should not be oxidized into the phosphates, as in that form they are not appropriated by the system.

They should be prescribed in the form of McArthur's Syrup of Hypophosphites Comp. (Lime and Soda). This is an agreeable, wholesome syrup, containing only the pure hypophosphites of lime and soda. If you are not already acquainted with it, a full sized bottle will be sent you upon receipt of 45 cents to cover express charges.

The McArthur Hypophosphite Co.,
Ansonia, Conn